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ART. I.—*Statistical Researches relative to the Etiology of Pulmonary and Rheumatic Diseases, illustrating the application of the Laws of Climate to the Science of Medicine; based on the Records of the Medical Department and Adjutant General's Office.* By SAMUEL FORRY, M. D., Medical Staff, United States Army.

THE object of the author in this paper is, to elucidate the laws which obtain in regard to the etiology of pulmonary and rheumatic diseases in the several systems of climate pertaining to the United States, and to demonstrate the advantages of peninsular Florida as a winter residence for pulmonic invalids.

Stretching over a vast extent of territory, the United States present a corresponding variety of climate, exhibiting, under multiform aspects, the animal and vegetable kingdoms. Occupying, as we do, the eastern coast of a continent of the northern hemisphere, the human frame is exposed to the contrasted seasons of the most excessive clime.* The extreme north has a

* So striking is this difference between our coast and the western coast of Europe, that Fort Sullivan, Maine, notwithstanding it is more than 11° south of Edinburg, Scot., exhibits a mean annual temperature 5½° lower, and Bordeaux, which is parallel with Fort Sullivan, has an annual temperature 15° degrees higher. These results find a ready explanation in physical causes. Europe is separated from the polar circle by an ocean, whilst eastern America stretches northwards at least to the 82° of latitude. The former, intersected by seas which temper the climate, moderating alike the excess of heat and cold, may be considered a mere prolongation of the eastern continent, whilst the northern

climate in which cold predominates, vexed by winds that have passed over interminable snows; the south acknowledges the genial influence of the sun; whilst the middle vibrates alternately to both extremes. The climate of the United States is, in truth, remarkably inconstant and variable, "passing rapidly," says Malte-Brun, "from the frosts of Norway to the scorching heats of Africa, and from the humidity of Holland to the drought of Castile." So sudden are the vicissitudes of weather in the middle States, that in the language of the Spectator, we often "lie down in July and rise in December."

The term *climate*, which is limited, in its rigorous acceptation, to a mere geographical division, and in ordinary parlance to the temperature only of a region, possesses, in medical science, a wider signification. It embraces not only the temperature of the atmosphere, but all those modifications of it which produce a sensible effect on our organs, such as its serenity and humidity, changes of electric tension, variations of barometric pressure, the admixture of terrestial emanations dissolved in its moisture, and its tranquility as respects both horizontal and vertical currents. Climate, in a word, constitutes the aggregate of all the external physical circumstances appertaining to each locality in its relation to organic nature. "To observe,"

lands of the latter, elevated from 3000 to 5000 feet, become a great reservoir of ice and snow, which diminish the temperature of adjoining regions. These results gave rise to the opinion that the old continent is warmer than the new, but more recent observation has shown that the western coast of both has a higher temperature than the eastern, in corresponding latitudes. This arises mainly from the steady prevalence of westerly winds, between the parallels of 30° and 40°; for there is thus swept from the ocean, which never sinks below the freezing point, a humid atmosphere, which, in its passage over the land, has a constant tendency to establish an equilibrium of temperature, and as its vapour is gradually condensed, it also evolves its latent heat. Philadelphia and Pekin, each on the eastern coast of its respective continent, and nearly in latitude 40°, have the same mean annual temperature; whilst on the western coast of the old and the new world, the same annual temperature is found about the 48th parallel. A striking resemblance is thus apparent in tracing the same isothermal line around the northern hemisphere, the east side of both continents presenting concave, and the west side convex summits. Continuing this comparison, it is seen that the climate of the new world, viewed in its general features, is, contrary to common opinion, more mild and uniform than that of the old. Taking, for example, the annual temperature of 53°.60, the eastern coast of Asia shows a difference of 55°.80 in the mean temperature of summer and winter, whilst the eastern coast of America exhibits a difference only of 43°.60; and, on the other hand, the western coasts of Europe and of America present respectively a difference of 28°.30 and 23°. Hence, the fallacy of the opinion which ascribes the mild climate of Europe to the influence of agricultural improvement, becomes at once apparent, when it is considered that the region of Oregon, lying west of the Rocky Mountains, which continues in a state of nature, has a climate less contrasted than that of Europe in similar latitudes, and that consequently it is in a proportionate degree milder than the climate of our own region, in which the labours of man in a few ages have almost wrought miracles, as well as that of the eastern coast of Asia, which has been under cultivation for several thousand years.

says Professor Rostan, "the simultaneous effects of light, heat, electricity, of the winds, &c., on the organic productions of the different zones of the earth, to explore the nature of this earth, to deduce from this knowledge the influence which they exercise on the physical and moral state of man, such is the wide field which climates *present* to our investigation."

The little knowledge that we possess upon these various points, is far from being precise. On the one hand, we are ignorant what constitute the real elements of climate; and, on the other hand, these complex agents act upon living organs still more complex in their functions. Our knowledge heretofore has consisted mainly of the unexplained results of experience. As the subject does not admit of the precision of the exact sciences, the aid of induction and analogy must be invoked. Having once acquired a knowledge of the distinctive characters of different systems of climate and of their effects upon the animal economy both in health and disease, the general laws regulating such influences may be readily ascertained. In the present inquiry, *the temperature of the air, and its hygrometrical state*—agents always supposed to exert a potent influence in the causation of pulmonary and rheumatic diseases—will alone be considered. Although it is necessary, in attempting to determine the relation subsisting between climate and vital action, to take into view the simultaneous influence of all meteorological causes; yet, as caloric is the controlling element in the constitution of climate, modifying its other properties, its laws, it is believed, will give, so far as the present inquiry is concerned, a very correct expression of climatic influence.

As it is intended to illustrate the application of the laws of temperature to the science of medicine, so far as they have relation with pulmonary and rheumatic diseases, it will be necessary to advert to those laws in a general way. In the northern division of the United States, four systems of climate representing two classes may be demonstrated, the one occupying the Atlantic and the Lakes, and the other, the intermediate region and that beyond the lakes. In arranging the medical statistics of the military posts, this classification of them will be adopted, following it up in the Middle and Southern divisions of the United States.

If the phenomena of terrestrial temperature depended solely on the position of the sun, climates might be classified with mathematical precision; but the effects produced by solar heat are so much modified by local causes that the character of a climate can be determined only by observation; and accordingly, the following classification, adopted in the present inquiry, is based upon particular systems of climate as determined by observation:—

General Divisions of the United States.		*Systems of Climate.*
1. Northern.	1 Class.	Posts on the coast of New England, extending as far south as the harbor of New York.
	2 "	Posts on the northern chain of lakes.
	3 "	Posts remote from the ocean and inland seas.

General Divisions of the United States.		*Systems of Climate.*
2. Middle.	1 Class.	Atlantic coast from Delaware Bay to Savannah.
	2 "	Interior Stations.
3. Southern.	1 Class.	Posts on the Lower Mississippi.
	2 "	Posts in the Peninsula of East Florida.

It is deemed sufficient to give an outline of the peculiarities of these systems of climate, characterized by a greater or less deviation of the isotheral and isocheimal lines from the parallels of latitude. The Northern Division presents the greatest variety of climate. On the sea-coast of New England, the influence of the ocean modifies the range of the thermometer and the mean temperature of the seasons. Advancing into the interior, the extreme range of temperature increases, and the seasons are violently contrasted. Having come within the influence of the great lakes, a climate like that of the sea-board is found; and proceeding into the region beyond the modifying agency of these inland seas, an excessive climate is again exhibited. The variations of the isotheral and isocheimal curves—the lines of equal winter and summer temperature—thus afford a happy illustration of the equalizing tendency of large bodies of water.

The chain of vast lakes or inland seas, lying in the course of the St. Lawrence, it is estimated, embraces an area of 93,000 square miles. Of amazing depth, these ocean-lakes, it has been computed, contain 11,300 cubic miles of water—a quantity supposed to exceed more than half of all the fresh water on the face of the globe.

The modifying influence of the sea-coast compared with the region beyond the lakes, is exhibited in the following table. It presents an average of five years, calculated from the data of two posts in each system of climate, the mean latitude of the posts on the ocean being 43°18′, and that of those in the opposite locality, 43° 10′.

Locality.	Latitude.	Mean Annual Temperature.	Range of the Thermometer			Winter.			Spring.			Summer.			Autumn.		
						December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.
						33 20	24.18	26.45	34.21	44.76	55.37	63 26	68.96	67.43	59.85	50.42	39.73
						25.07	18.82	21.78	34 20	48.05	64.49	75.04	76 81	73.92	60.85	52.92	37.43
Sea-coast	43°18′	47°.19	98	-24	122	27.94			44.78			66.55			50.00		
Region beyond the Lakes	43°10′	48°.99	104	-30	134	21.89			48.91			75.26			50.40		

In the former, the mean temperature of winter is 6°.05 higher than the latter; that of spring is 4°.13 lower; that of summer is 8°.71 lower; and that of autumn 0°.40 lower. This contrast is more strikingly shown by comparing the difference in the mean temperature of winter and summer, it being on the sea-coast 38°.61, and in the opposite locality 53°.37. It is thus apparent, that a classification of climates, having, for its basis mere latitude, is wholly inadmissible; for, although there may be little difference in the mean annual temperature, yet the distribution of heat among the seasons may be extraordinarily unequal.

These facts are still more strikingly illustrated in the following table, which exhibits a comparison between posts on the lakes and those of the same region situated beyond their influence.

Locality.	Latitude.	Mean Annual Temperature.	Range of the Thermometer.			Winter.			Spring.			Summer.			Autumn.		
						December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.
						23.04	16.98	19.85	27.20	39 44	52.56	58.24	67.13	63.51	55.94	47.19	36.33
						18.07	13 74	20.35	31.90	44.81	62.42	71.53	76.49	72 07	58.47	50.81	36 31
Lakes	46°27′	42°.22	93	-26	119	19.96			39.73			62.96			46.49		
Remote from the Lakes	44°53′	46°.47	96	-26	122	17.42			46 38			73.26			48.53		

It thus appears that the winter of the former, notwithstanding it is 1°.46 north of the latter, has a mean temperature 2°.54 higher, whilst that of summer is 10°.40 lower. In the latter, the mean temperature of spring is 6°.65 higher, and that of autumn is 2°.04 higher. The difference in the mean temperature of summer and winter, making due allowance for difference of latitude, is even greater than in the comparison with the Atlantic coast, that of the Lakes being 43°, and that of the opposite locality 55°.84. In the former region, the prevailing weather is cloudy, and in the latter fair; thus, during the year the proportion of days is—

	Fair.	*Cloudy.*	*Rain.*	*Snow.*
Remote from lakes,	216	73	46	29
Lakes,	119	132	67	47

Localities under the influence of the ocean or inland seas, do not exhibit great extremes of temperature, but the air is moist, and the changes of season are slow, uncertain and variable. On the other hand, the climate of localities, removed from such equalizing influences, is characterised by a great range of the thermometer, and a corresponding dryness of the atmosphere; the mean temperature of winter and summer is strongly contrasted, and the seasons change in constant and rapid succession. Other meteorological

phenomena are similarly modified by various causes. Thus in countries and seasons, in which solar action is most intense, electrical phenomena are most frequent and energetic; and whilst atmospheric moisture favours the passage of electricity from the earth to the clouds, the opposite condition causes its accumulation in objects on its surface. In the excessive climates just described, thunder and lightning are of rare occurrence, and terrestrial objects are charged with an unusual portion of electricity; whereas in the warm and moist atmosphere of the contrary localities, opposite phenomena are witnessed. The atmospheric dryness of the former pertains more particularly to latitudes above 40°; it is found, however, even in tropical countries remote from the ocean, more especially when high mountains intervene, condensing the moisture wafted by the winds from the sea; and in those regions in which currents of air traverse extensive tracts of arid soil, the dryness is extreme.

It is evident that the annual quantity of rain that falls upon any point of the earth's surface, depending, as it does, upon the amount of evaporation and the prevailing winds, is very intimately connected with the character of climate. The smallest quantity of rain generally falls in February and March, and the greatest amount in July, when the mean monthly temperature is highest. As a general rule, the annual quantity increases in proportion as the equator is approached, more especially in maritime localities and places in which ranges of elevated tracts skirt the sea coast; but as this augmented quantity falls at a particular season, and in a shorter space of time than in colder regions, the annual number of dry days, particularly in inland districts, is proportionally increased. In cold or temperate maritime localities, on the contrary, the rain, although much less in annual quantity, descends much more frequently, but in slighter showers. Consequently, the number of wet, foggy and drizzling days, is much greater than in warm and inland regions.

Conformably to these general laws, it is found that the climatic features of the coast of New England and of the region of the great lakes, exhibit a striking resemblance, whilst those of the third class of the same division are very dissimilar. The most characteristic feature consists in the distribution of heat among the seasons. These results have already been fully detailed. The climate of the third class, comprising the posts remote from the ocean and inland seas, is distinguished from the first two by great extremes of temperature, by seasons strongly contrasted, and a corresponding dryness of the atmosphere. The winters of this class, with the exception of the most southern posts, are characterized by extreme severity. From November to May, cold weather prevails, the ground being generally covered with snow to the depth of three or four feet, and the general range of the thermometer being from the freezing point to 30° below zero. The summers are equally remarkable for extremes of temperature. The heat is often as oppressive as in Florida, the mercury sometimes rising, in June, July and August, to 100°

Fahrenheit in the shade. Unlike the two preceding classes, in which the air is moist, and the changes of the seasons more slow and uncertain, in this one, a constant and rapid succession is observed among the seasons, summer succeeds winter so rapidly that there is scarcely any spring, and vernal vegetation is developed with remarkable suddenness.

We possess no exact measurement of the relative quantity of rain that falls in our different systems of climate; and as no observations have been made upon the hygrometer, their relative degree of humidity cannot be determined. The ratio of fair and cloudy weather, in each system of climate of the northern division has been ascertained. The proportion of rainy and cloudy days on the ocean and the great lakes, it has been seen, is nearly twice as great as in the opposite localities; but there is no regular difference in the mean annual quantity of rain.

In the *Middle Division*, the two systems of climate bear the same meteorogical relation towards each other as the third class of the Northern Division does to the first two. Notwithstanding the extremes of temperature are much more modified in the Middle than in the Northern Division, the former is characterized by variableness, whilst in the latter a steady temperature predominates. Jefferson Barracks, near St. Louis, Missouri, shows a greater contrast in the seasons than Washington city; and on comparing Fort Gibson, Arkansas, with Fort Monroe on the coast of Virginia, notwithstanding the latter is 1° 32′ north of the former, a similar result is exhibited.

The *Southern Division* is characterized by the predominance of high temperature. Proceeding South from Canada to Florida, the seasons become more uniform in proportion as their annual temperature increases. This is strikingly illustrated on comparing the difference between the mean temperature of summer and winter at Fort Snelling, Iowa, and at Key West, at the southern point of Florida, the former being 55°.51, and the latter only 11° .34. The peculiar climatic character of this Division is distinguished less by the mean annual temperature than in the manner of its distribution among the seasons. This subject will be further elucidated when the climate of the peninsula of Florida comes under special consideration—a land in which the rigours of winter are unknown, and in which smiling verdure never ceases to reign.

In regard to the remaining elements of climate, such as the admixture of terrestrial emanations dissolved in atmospheric moisture, our positive knowledge is still more limited. This subject, intimately connected with febrile endemics, has little relation to the present inquiry. That mysterious agent—malaria—although too well recognised in its deleterious effects on the human frame, has hitherto remained inscrutable in its nature. Of the two systems of climate, the uniform and excessive, the influence of the latter upon man, breathing a dry, pure, and cool atmosphere, more especially in regions elevated high above the sea, is manifested in his being little subject to severe and malignant fevers; and although pulmonary diseases are more rife than

in any other system of climate,* he attains the maximum of the mean duration of human life. On the sea-coast, and the banks of lakes and rivers, or in low and narrow valleys, characterized by a deep, moist and rich soil, abounding with organic remains in a state of decomposition, the air is humid, sultry and relaxing, and loaded with noxious effluvia. The human frame is consequently imperfectly developed, the mortality of children is very great, and the mean duration of life is comparatively low. In the northern and temperate regions, however, maritime places are not less salubrious than inland districts. A locality, somewhat elevated, with an undulating surface, a well cultivated soil, and no marshes in the vicinity, presents the circumstances most favourable to health and longevity.

It is thus seen that there are many circumstances besides mere temperature, which enter into the constitution of climate. Amongst these, as influencing organized beings, one of the most important is the nature of *soil*, the formation of which has apparently been the result of the gradual attrition of the solid materials composing the crust of the globe. As all animals and vegetables, at least all land animals, are dependent for existence on this stratum of comminuted mineral substances and organic remains, its influence in regard, not only to mere health, but the organic modifications which the human frame experiences, constitutes an interesting subject of inquiry.

Having already demonstrated that the regions of the United States on the same parallels of latitude, present systems of climate very diverse in character, viz: 1. The regions bordering on the ocean: 2. Those under the influence of inland seas; and 3. Those remote from such controlling powers: it will be seen that these laws of climate maintain an intimate relation with the etiology of pulmonic diseases. It seems to be a well-established law, that the prevalence of *catarrh* and *influenza* in each *system* of climate, increases and decreases in proportion as the seasons are contrasted, thus maintaining an unvarying relation with the extreme range of the thermometer as connected with the seasons.

The following table presents in a condensed form, so far as regards the *catarrhal* form of pulmonic lesions, the result of the quarterly sick reports of 45 permanent posts, arranged in classes, comprising a period of ten years, the details of which are given in Abstract No. 1† of Appendix:—

* In the Northern Division of the United States, this law, it will be seen, is limited to catarrh and influenza.

† This abstract contains, besides the result of the permanent stations, that of 31 temporary posts in Florida. It is based on an aggregate mean strength of 47,220 and the period of observation extends from 1829 to 1838 inclusive. It exhibits the condensation of about 1500 quarterly reports of sick, and the mean strength of each post computed from monthly returns in the adjutant-general's office.

Ratio of Catarrhal Diseases.

Divisions.	Systems of Climate.	Latitude.	Diff. between the mean temp. of winter and summer.	Ratio treated per 1000 mean strength. First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Annual result.
Sou. Mid. North'n.	1st Class. Posts on the coast of N. Eng.,	43°18′	38°.61	63	49	36	85	233
	2d Class. Posts on N. chain of Lakes,	46°27′	43°.00	90	62	50	96	300
	3d Class. Posts N. of l. 39°, and remote from the ocean and inland seas,	44°53′	55°.84	175	120	86	169	552
	1st Class. From Del. Bay to Savannah,	37°02′	32°.99	102	45	23	97	271
	2d Class. South-western Stations, -	35°47′	36°.83	122	61	33	78	290
	1st Class. Posts on lower Mississippi,*	30°10′	24°.39	92	34	26	60	218
	2d Class. Posts in Peninsula of E. Flor.,	24°33′	11°.34†	45	24	40	33	143
	Total,			689	395	294	618	

These seven classes constitute certain systems of climate, each of which forms the boundary of a specific ratio in relation to pulmonary affections. The three grand divisions are:—1. The *Northern* region of the U. States, in which cold predominates, embraced in the first three classes of the table; 2. The opposite extreme, the *Southern* division, in which a high temperature prevails; and 3. The *Middle* region, the temperature of which vibrates to both extremes.

This table, which exhibits the annual and quarterly ratios of each system of climate, and serves to elucidate their relations and sequences, affords a beautiful illustration of the etiology of catarrhal affections as connected with the meteorological laws established. Take, for example, the northern division consisting of the first three classes:—On the New England coast, as the ocean modifies the atmospheric temperature the annual ratio treated per 1000 of mean strength, is as low as 233; on the great lakes, where a similar modifying influence is in operation, it is 300; whilst the third class, characterized by the extreme range of the thermometer, has a ratio as high as 552. But let us follow more narrowly the isotheral and isocheimal lines, (representing the mean temperature of summer and winter,) which describe four curves within the same space, presenting alternately a *mild* and an *excessive* climate. As these lines, on the coast of the Atlantic, present comparatively little deviation from the terrestrial parallel, the ratio of catarrhal diseases is low; advancing into the interior, the line of equal summer rises and that of winter sinks, and the ratio increases proportionally; proceeding into the region of the lakes, the lines again converge beneath the controlling power of the waters, and the ratio of catarrh and influenza is modified

* For want of a better arrangement, Augusta Arsenal, Georgia, and Fort Mitchell, Alabama, have been included in this class.

† This result is obtained from the observations made at Key West. At Fort Brooke, Tampa Bay, it is 16°.02.

accordingly; again advancing into the interior beyond these ocean-lakes, the average rises in proportion as the isotheral and isocheimal curves tend to opposite directions. In the other grand divisions, the same law obtains. On the Atlantic coast, between the Delaware and Savannah river, the annual ratio is 271,* whilst the average of the interior posts, notwithstanding this class lies somewhat farther south than the former, is 290. As most of the posts of the first class of the southern division are on the Lower Mississippi, and are much under the influence of large bodies of water, the annual ratio is as low as 218; whilst the second class, which comprises the mild, insular climate of East Florida, has an average of only 143.

It would seem then that sudden atmospheric vicissitudes combined with moisture, do not excite a strong susceptibility to catarrhal diseases, else the sea-coast and the lakes should give a higher ratio than the dry and cold atmosphere of the opposite localities. The results, on every hand, afford satisfactory proof that the ratios of these lesions are highest, when the seasons are well marked, producing a decided impression upon the animal economy, and that they are less dependent upon daily variations of temperature than upon its extreme range as connected with the seasons.

In regard to the climate of the United States, the rule holds good, that wherever the seasons are violently contrasted the ratio of catarrh and influenza is highest, decreasing in proportion as the difference in the mean temperature of summer and winter grows less. Thus the ratio on the northern chain of lakes is little more than half as high as in the adjoining localities removed from the agency of large bodies of water; and accordingly, we find that the mean winter temperature of the latter, in the same latitude, is three degrees lower, and the summer temperature ten degrees higher, than the former, whilst the difference in the mean temperature of winter and summer is at least 16° less on the Lakes. Although we possess no exact measurement of the relative quantity of rain which falls in these two positions, nor any precise hygrometic observations; yet we know that the atmosphere of the lakes is much more moist, as the number of rainy and cloudy days is nearly twice as great as in the opposite locality.

Here then are several laws established in meteorology as applied to the etiology of disease. But let us test, by a further application of the principles, the universality of these physical laws. As the *middle* division is subject to the extremes of the northern and southern latitudes, so it is found to be prolific in pulmonic lesions in general. The result of eight military stations, (the 1st class of the middle division,) situated on the sea-coast and inlets between the Delaware and Savannah, gives an average of catarrhal diseases higher than that of the northern coast, where cold prevails, as well as that of more southern latitudes, in which a higher temperature predominates.

* In this class, Fort Monroe, and in the first class of the northern division, Fort Independence have been excluded, for reasons to be given in the sequel.

The annual ratio of the middle coast being higher than either extreme, let us see whether it bears the usual relation with the interior region of the same latitude. This refers to the south-western posts, of which Jefferson Barracks, lat. 38° 28′, is the most northern, and Fort Jesup, lat. 31° 30′, is the most southern point. True to the general law developed, we find that the ratio (290 to 271) is in accordance with the augmented difference in the mean temperature of summer and winter.

Before proceeding to the *Southern Division*, it will be necessary to remark that the statistics of Fortress Monroe, on the coast of Virginia, which seems to be under the influence of no ordinary laws, have been excluded in the calculation of the class to which it belongs. The ratios of catarrh and influenza per 1000 of strength, compared with the eight other posts of this class, stand as follows:—

	1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
Fortress Monroe.	225	146	94	339
Remaining Posts.	102	45	23	97

It is thus seen that the averages are from two to fourfold higher than the mean ratios of the other posts of the same system of climate. Although the results are extraordinary, yet the influence of the seasons is strikingly manifest. The statistics of this post embrace a period of nine years; and whilst the nine fourth quarters, with an aggregate mean strength of 2625, give a total of 774 cases of diseases of the respiratory organs, 426 cases are reported in one of these quarters, with a mean strength of 609. Of these cases, 372 are registered as "Epidemic influenza," which continued to prevail until the following April. In the first quarter of this year, (1832) 259 cases of pulmonary disease are reported, 219 being "epidemic catarrh," in a command of 570 men; and in the second quarter, in a mean strength of 352, 154 pulmonic affections are reported, (126 being of the epidemic form,) most of which occurred early in the quarter. As these facts, however, are insufficient to explain the general result, much may have been owing to the agency of local causes; for example, the dampness of the men's quarters, which were in the casemates between the ditch of the Fort and the water of the Bay. On reference to Abstract No. 1, of Appendix, it will be seen that the contrasts are equally great in regard to pleuritis and pneumonia. It may be added that a large proportion of the deaths have arisen from this class of diseases. During the nine years, 102 deaths are reported in the medical returns, among which are 17 phthisis pulmonalis, 4 pneumonia, 3 pneumonia typhoides, 4 influenza, and 1 engorgement of the lungs. The average mortality from pulmonary diseases is about twice as high as at the remaining posts of this class.

The *Southern Division*, consisting of two classes, remains to be examined. The annual ratios of both these systems of climate are lower than that of any other. The first class of this Division is little removed from the

second of the *middle* division in point of latitude; but, owing to the modifying agency of the Gulf of Mexico, and the large lakes in the region of the Lower Mississippi, it holds an intermediate relation in respect to the south-western stations, and the climate peculiar to the peninsula of Florida. These annual ratios are as follows—290, 218 and 143. As the climate of East Florida is the most mild and equable, possessing all the advantages of the most favoured insular regions, so it presents the lowest average of catarrh and influenza.

The numerical results thus far obtained have been not in the least anticipated. If to enter upon an investigation free of preconceived opinions may be considered a merit, the claims, in the present instance, are still greater, inasmuch as the views of the writer were diametrically adverse to the conclusions warranted by the data; for we believed, with the rest of mankind, that the atmospheric moisture and sudden vicissitudes of temperature ascribed to positions on lakes and the ocean, exercise a greater agency than the dry and less variable climate of the interior, in the production of catarrhal diseases. Content to observe facts and to trace their relations and sequences, the author has essayed to be a faithful interpreter of nature; and as it is a leading principle of the inductive philosophy, to *ascertain the universality of a fact*, these researches will now be continued in a new direction.

Having obtained thus far unvarying results in regard to the annual average, I shall proceed to an investigation of the quarterly ratios as illustrative of the influence of the seasons. Having determined elsewhere the relative agency of the seasons in the causation of intermittent fever throughout the United States, I am enabled to say that catarrhal affections acknowledge this influence in a still more eminent degree. A single glance at the table of the "*Ratio of Catarrhal Diseases*" (p. 21,) will afford a satisfactory explanation. It will be seen that the ratios of the first and fourth quarters, in obedience to a general law, are always the highest, and that the third invariably presents the lowest average. The second class of the Southern Division, which exhibits an apparent exception to this rule, the third quarter having a higher ratio than the second or fourth, it will be found, illustrates the ancient axiom—*exceptio probat regulam.* As the Peninsula of Florida affords no marked distinctions of seasons, as will be shown more fully, it follows that amongst the causes which determine the prevalence of catarrhal lesions, those that are secondary in the other systems of climate, become in this the primary ones. Finally, the aggregate of each quarter, which gives a fair expression of the relative influence of the seasons in the etiology of catarrh and influenza throughout the United States, as shown in the same table, affords satisfactory demonstration of the general laws developed. These ratios stand as follows;

1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
689	395	294	618

These facts having been determined, the advantage of a winter residence

in a more southern latitude to a person labouring under *chronic bronchitis*, becomes at once apparent. If he can avoid the transition of the seasons—that meteorological condition of the atmosphere, which stands first among the causes which induce catarrhal lesions, he will do much towards controlling his malady. Let us suppose him on the coast of New England, in the 3d quarter, the ratio being as low as 36, when the sudden transition of the season brings it up to 85. The consequences will inevitably be an aggravation of that disorder to which he is predisposed; for the respiratory organs, even when healthy are peculiarly susceptible, at this season, to abnormal action. Let us, on the contrary, suppose him gradually moving south with the change of the season, and the 4th quarter will find him in a climate whose ratio is even lower than that of the preceding quarter in the region which he had left. On the coast of New England, the ratio of the 3d quarter is 36, and that of the fourth is 85, whereas the average of the latter quarter in peninsular Florida is only 33. These are not isolated facts, but uniform results obtained from ten years' observation. As the same law obtains in every system of climate, it is easy to apply the remedy.

The assemblage of morbid phenomena, usually designated by the term *consumption* or *phthisis pulmonalis*, it is well known, may arise from various pathological conditions of the respiratory organs. In a practical point of view, it is important to discriminate these several affections. Varying much in the degree of sanability, it is generally conceded that that form of consumption which depends upon chronic bronchial inflammation, is by far the most under the control of remedial management. Recoveries are not uncommon in those cases in which the mucous tissue remains free from ulceration, or the subjacent pulmonic structure has not become consolidated.

As regards the advantages of change of climate, it will be observed that reference is made only to *chronic bronchitis* as a natural consequence, notwithstanding the inference, that similar effects, reasoning from analogy, would follow in other forms of consumption, might be warranted. As it is, however, the catarrhal or pituitous consumption of authors that probably constitutes the majority of the reputed cases of phthisis pulmonalis in northern latitudes, and as this is the only form that can be really considered remediable, the importance of determining the comparative influence of season and climate in relation to catarrhal lesions, becomes more strikingly manifest.

As the doctrines maintained are conclusively established, a further discussion were useless. But this subject, at the present day, is invested with more than ordinary interest, by reason of the conclusions deduced from the "Statistical Reports on the Sickness, Mortality and Invaliding" among the British troops stationed in every quarter of the globe. In regard to *phthisis pulmonalis*, the reporter shows by numerical results, that it is more prevalent in southern than northern latitudes, and that it is "*by no means likely that any beneficial influence can be exerted by climate itself*" in pulmonary

affections. The conclusion that pulmonic lesions, as regards the annual ratio, are more prevalent in certain *systems* of climate in southern than northern latitudes, is confirmed by the statistics of the United States army; but as we proceed in the investigation of this question, in relation to the relative influence of the *seasons*, the general opinions in regard to change of climate in pulmonary affections, maintained since the days of Hippocrates, will be triumphantly established. Major Tulloch, in his able reports, has in some measure, set the world right in regard to a *theoretical* error, but has, unfortunately led it, at the same time, into a *practical* one.* It is thus seen that his deductions are vitiated by the radical error of basing them on the *annual* results without reference to the influence of the *seasons;* and, did space permit, it were easy to show that the inferences deduced from his numerical results are, in many instances, unwarranted, as he has fallen into the error not only of taking the mean of the averages given by the stations of a command, but into that of comparing the lowest average in one command with the highest in another.

It is not, however, pulmonary diseases alone that augment and diminish with the varying seasons—a fact established by the result of statistical data. The prevalence of a specific disease, or a class of diseases, constitutes a morbid *diathesis*, which modifies the character of all other lesions. In our northern and middle States, pulmonary diseases constitute the prevailing *diathesis* in the first and last quarters of the year, whilst, in the second and third quarters, the ratio is not more than one third as high as the average given by the diseases of the digestive organs. An invalid labouring under chronic bronchitis is, therefore, on the accession of the fourth quarter, doubly subject to renewed attacks; whereas by going south in the latter part of the third quarter, he leaves a region in which diseases of the digestive organs are the reigning lesions, and enters another of the same character; and as his system has not been acted upon by the long continued heats of a southern summer, he is less susceptible than the residents, to the influence of those causes which induce pulmonary affections. The pulmonic of the south, to enjoy the full benefit of his own climate, must, therefore, spend his summers in more northern latitudes. In Florida, malarial diseases constitute the morbid diathesis in every season; and if the old idea, that the air of a marshy country is beneficial in consumption, be but partially true, then,

* The opinion that it is worse than useless to visit southern regions in pulmonary diseases, has been very generally embraced on the strength of these statistics. The following extract from the Med. Chirurg. Review, may be given as an example:—These reports "*have given the death blow to the expatriation of invalids affected with pulmonary alterations.* They serve also to show us the salubrity of our calumniated climate, and to lower our aspirations for that 'sweet south,' whose sunny skies and luxuriant plains too commonly smile but to betray. Statistics dispel those illusions of poesy, and even prove that consumption, the reproach of our fickle seasons, lurks as fatally in the balmy Italian zephyr, or the sultry tropical breeze."

indeed, must this climate be an infallible remedy. It will be seen, however, that among northern troops, stationed at the south through all seasons, consumption of a tubercular nature frequently supervenes upon febrile diseases, more especially in constitutions broken down by intemperance, standing in the relation of those other sequelæ—dropsy, jaundice, and the various chronic lesions of the viscera.

I have thus concluded the investigation of catarrhal diseases in reference to the agency of season and climate; and the results, it is conceived, demonstrate conclusively the advantage of a winter residence in the peninsula of Florida in cases of *chronic bronchitis*. In endeavouring to determine, by ordinary observation, the influence of meteorological causes in relation to disease, the difficulties of the inquiry are very great, owing both to the complexity of the agents concerned and that of the organs and functions upon which they act. Independently of incidental miasmata, whether gaseous admixtures, animal or vegetable products, or other agents still less within our knowledge, this inquiry naturally divides itself into four heads—viz: *The Temperature of the Air—Its Hygrometrical Condition—Its Weight —and Its Electrical State and Changes.* The agency of winds may be referred, in a great measure, to some one of these conditions. Although little has been done to determine the influence of light, yet seeing what has been effected by science in expounding the physical conditions through which this great agent operates, and its effects, for example, on the growth and economy of plants, many of its relations to the body, there is reason to believe, will be hereafter ascertained. The present inquiry embraces in its scope the temperature of the air and, in some measure, its hygrometrical state. Although we feel these various agents to be in perpetual operation, yet it is singular how little real knowledge has been gained in relation to their connection with disease, The difficulty of the research is mainly enhanced by the circumstance that none of these conditions act singly upon the living body; and to meet the perplexity of these questions, meteorology, which is itself only taking a place among the exact sciences, has not yet accomplished much. To determine these laws, the personal observations of a single individual cannot be of much avail. It is only by extending these observations through a series of years and over vast masses of individuals, upon the principle of the numerical mode of analysis, that correct conclusions can be attained. It has just been seen that by the application of the doctrine of averages, important relations have been disclosed discoverable in no other way. The progress of physical science, it is thus seen, is ever lending fresh aids to that of pathology; and judging from the character of the results now developed, a favourable augury of the future, as the range of meteorological science, aided by new instruments, is being enlarged, is justly warranted.

I shall now proceed to the investigation of the laws which obtain in regard to *pleuritis and pneumonia.* As these lesions, it is very probable, are

dependent upon the same metereological causes, the results will be investigated conjointly. In abstract No. 2 of Appendix, the relative prevalence of each is exhibited. The following table presents the quarterly and annual ratios of pleuritis and pneumonia in each system of climate:—

Ratio of Pleuritis and Pneumonia.

Divisions.	Systems of Climate.	Ratio treated per 1000 of mean strength. First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Annual Results.
Nor'n.	1st Class. Posts on the coast of New England, -	12	11	8	10	41
	2d Class. Posts on Northern chain of Lakes, - -	11	15	13	11	49
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - -	14	11	7	12	45
Mid.	1st Class. Coast from Delaware Bay to Savannah, -	21	11	8	16	57
	2d Class. South-western Stations, - - - -	46	18	10	20	92
Sou.	1st Class. Posts on the lower Mississippi, - -	20	9	4	11	47
	2d Class. Posts in the Peninsula of East Florida, -	14	9	8	6	39
	Total,	138	84	58	86	

It hence appears that the laws in regard to pleuritis and pneumonia, as expressed by the numerical results, differ, in some points, from those peculiar to catarrhal diseases. In the three classes of the Northern Division, the modifying agency of the ocean and lakes, is not manifested in the results. In the other systems of climate, the laws are the same as in catarrhal affections; thus, the difference between the two classes of the middle division is very striking, whilst those of the southern division exhibit a remarkable decrease in the annual ratio. An examination of the quarterly averages as illustrative of the influence of the seasons, compared with catarrh and influenza, will also show some variation. In the first three classes, notwithstanding the third quarter is the lowest, the agency of the seasons is not very manifest. In all the others, the difference is very striking; and in taking the total of each quarter, which affords a fair expression of the relative agency of the seasons in the causation of pneumonia and pleuritis throughout the United States, it is found that the law is the same as in catarrhal diseases, the first and fourth quarters presenting the highest, and the third, the lowest average. Thus:—

1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
138	84	58	86

In these calculations, Forts Monroe and Independence have, as before, been excluded. On reference to Abstract No. 2 of Appendix, the relative prevalence of these diseases at each of these posts may be seen. At Fort Independence, the total of pleuritis and pneumonia is eight times as high as

that of catarrh, whilst the ratio of the former is nearly twenty times as high as that of the remaining posts of this class. As but one death is reported among 261 cases of pleuritis and pneumonia, it is reasonable to presume that a great majority belonged to the class of catarrhal affections.

From the table just given, it appears that the average of pleuritis and pneumonia is much lower in the cold and variable climate of our northern and eastern States than in the middle and southwestern regions of the United States. At the southwestern posts the annual ratio is 92, whilst on the coast of New England it is only 41. In catarrhal affections, the same law obtains so far as the New England coast is concerned; but the second, and especially the third class of the northern division exhibit contrary results. It has been seen that catarrhal lesions in every system of climate obey the law in respect to extremes of temperature as connected with the seasons. In pleuritis and pneumonia, this law receives some modification; for example, the third class, comprising the posts in the northern division, remote from the ocean and inland seas, has a ratio only half as high as that of the southwestern stations. At Fort Snelling, Iowa, in the former class, the difference in the mean temperature of winter and summer, is 55°.51; whilst at Fort Gibson, Arkansas, in the latter, it is only 36°.83. In the former, the summers, although the mercury rises very high, are short; but in the latter the summer heats are both great and long continued. It would seem to be a law that in proportion as the high temperature of summer makes an impression upon the system, do the lungs become susceptible to the morbific agency of the opposite seasons. In the northern division, for example, as cold predominates, and no decided impression is made upon the animal economy by the short summer, the annual ratio of pleuritis and pneumonia is not only low, but there is little difference in the ratios of the seasons; on the other hand, at the southwestern posts, remarkable for high and long continued summer heats, the annual ratio is about twice as high as in the northern States, whilst the difference in the seasons is very considerable, the ratio of the third quarter being less than one ninth of the annual average. This contrast is rendered still more striking by the fact, that whilst the ratio of the first quarter is nearly four times higher at the southwestern than at the northern posts, there is no difference in the averages of summer. At Fort Gibson—a point at which the mercury rises higher than at any other post in the United States, the averages stand thus:—First quarter 71; second quarter 19, third quarter 9, fourth quarter 15, the annual ratio being 112. On comparing the southwestern stations with the corresponding posts on the Atlantic, the general law in reference to the modifying agency of the ocean is strikingly manifested. In the first class of the southern division, as the seasons grow less contrasted, the annual ratio decreases materially; and lastly, in the remaining class (East Florida), in which, for example, at Fort Brooke and at Key West, the difference in the mean temperature of winter and summer is respectively only 16°.02 and 11°.31, the lowest average is

presented. It is thus seen that in regard to pleuritis and pneumonia, it seems necessary to consider not only the degree of contrast in the seasons, but the duration of high temperature. Leaving out of view the three classes composing the northern division of the United States, the law is precisely the same as in catarrhal lesions.

The subject of *phthisis pulmonalis* will next engage attention. The quarterly and annual averages, in each system of climate, are shown in the annexed table:—

Ratio of Phthisis Pulmonalis.

Divisions.	Systems of Climate.	Ratio treated per 1000 of mean strength.				
		First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Annual Results.
Sou. Mid. North'n.	1st Class. Posts on the coast of New England, -	2	3	2	3	9*
	2d Class. Posts on Northern chain of Lakes, - -	3	2	2	2	9
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - -	2	1	1	1	5
	1st Class. Coast from Delaware Bay to Savannah, -	4	5	2	3	13
	2d Class. South-western stations, - - - -	3	3	4	2	11
	1st Class. Posts on the lower Mississippi, - -	3	3	2	2	9
	2d Class. Posts in the Peninsula of East Florida, -	2	2	2	2	9
	Total,	19	19	15	15	

It would not appear that any general laws can be deduced from these numerical results. In the northern division, the average of the third class, contrary to the general results of the class of diseases of the respiratory organs, is much the lowest: but this difference is more apparent than real, from the circumstance that nearly all the fatal cases of consumption in this division are ascribed to the abuse of ardent spirits. In the third class, for example, were the results of West Point, a command consisting mainly of officers and cadets, excluded from the calculation, the annual ratio of cases per 1000 rises nearly to 7; and the difference still existing is doubtless owing to the greater facility of obtaining, at the posts along the sea-board, inebriating potations. It is more than probable that the ratio of chronic bronchitis, follows the laws which obtain in respect to catarrhal lesions; but in regard to phthisis pulmonalis in general, these laws cannot be recognised. It is an important fact that whilst the averages of catarrh and influenza, pleuritis and pneumonia, in the first class of the middle division are reduced nearly 50 per cent. by excluding Fort Monroe, the ratio of phthisis pulmonalis is increased. It confirms the opinion that this disease, although much under

* As fractions are not given, and as the mean strength of each quarter varies, the annual results do not always correspond with the total of the quarterly ratios.

the influence of season and climate, is still more, especially among troops, under the control of other agents. As all causes by which the energies of the human frame are sapped, conduce to the development of the tubercular form of consumption, so northern constitutions exposed to the chronic diseases and debilitating heats of a southern latitude, acquire a peculiar susceptibility. In systems broken down by habits of intemperance, it is very apt to supervene upon certain chronic affections, as the sequela of remitting and intermitting fever, diarrhœa, &c. Facts of this kind having relation to the annual results, without reference to the influence of the seasons, it has been seen, led the British reporter into the erroneous conclusion that no change of climate is beneficial in any form of consumption.

The *annual* results in regard to the class of pulmonary diseases, as well as the mortality from each, now come under investigation. As the cause of every death is not specified in the quarterly sick-reports, a correct result in respect to the mortality can only be approximated. The total of deaths given in the following table are those only which occurred among men on the sick list—a ratio considerably lower than that of the post returns which include the deaths from all causes:

		Ratio of cases per 1000 of mean strength.					Deaths.						
Northern Region of the United States.	Mean Strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Total.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Hæmoptysis.	Total per Medical Returns.	Causes not specified.
Atlantic Posts, - - - -	3130	233	22	26	9	290		1		15		140	16
Posts on the Lakes, - - -	5973	300	19	30	9	358	1	4		9		65	12
Posts remote from the ocean and the Lakes, - - - -	12604	552	17	28	5	602		3	1	22	1	119	16
Total,	21707	439	18	28	7	490	1	8	1	46	1	324	44
Southern Region.													
Coast from Delaware to Savannah,*	3199	271	25	32	13	341		1	1	19		196	18
South-western Stations, - -	11140	290	39	52	11	392	31	2	61	2		478	75
Posts on the lower Mississippi, -	3381	218	22	28	9	277	2	2	10			178	30
East Florida,	4607	143	15	24	9	191		1	9			131	17
Total,	22327	246	29	40	10	326	34	6	99	2		963	140

* Fort Monroe, as before, so far as pulmonary diseases are concerned, is excluded from this class. There are reported 102 deaths, of which 4 arose from influenza, 8 from pneumonia, and 17 from phthisis pulmonalis.

It is thus seen that, with the exception of catarrh and influenza, the annual ratio of pulmonary diseases is lower in the northern than in the southern regions of the United States. It is in the middle districts of the United States, however, that pneumonia, pleuritis, and phthisis pulmonalis, are most prevalent, the peninsula of Florida having a lower average than any other region. It is found too, that the same law obtains in regard to the mortality arising from this class of diseases, the deaths per 1000 of mean strength being as under:—

	Phthisis Pulmonalis.	*Pneumonia, pleuritis, and catarrh.*
Northern Region.	2.1	0.5
Southern "	4.4	1.8

For the purpose of comparison, these results are deemed sufficiently accurate; but it is necessary to mention, as appears by the table, that among the deaths in the Northern Region, the causes of about one eighth, and in the Southern, the causes of one-seventh are not reported. It is known, however, that the majority of the deaths, the causes of which are not specified, belongs to the class of casualties.

The high mortality of the southern regions is caused by the Middle Division of the United States, the average on our southern coast being comparatively low. Taking the statistics of the posts in East Florida, and those on the Lower Mississippi, the ratio of phthisis pulmonalis is found to be only 1.7, and that of the remaining lesions of this class to be no more than 0.7 per 1000 of mean strength. It is also ascertained that these diseases are of a more fatal tendency in the Southern than in the Northern Regions. In the latter, the ratio of mortality from phthisis pulmonalis is 32, and in the former, 42 per hundred cases; and as regards pleuritis and pneumonia, the difference is much greater, the average mortality in the Northern being 9, and in the Southern, 26 per thousand cases. It is necessary to add, however, that this high mortality is limited to the south-western posts, 33 deaths, (out of 40—the total of the four southern classes,) being reported in this class.

These statistics then show that as regards pneumonia, pleuritis, and phthisis pulmonalis, the ratio of cases and deaths is greater in our middle regions, including the south-western stations, than at either extreme. In endeavouring to account for this result, much may, perhaps, be due to the circumstance that the subjects are generally from the Northern States, or from Europe. It may be safely asserted, as has been already remarked, that the majority of cases of consumption at our southern posts supervene upon febrile diseases, more especially in constitutions broken down by intemperance, bearing the same relation to fevers as those other sequelæ—dropsy, jaundice, and the various chronic lesions of the viscera. On the Lower Mississippi—a class of posts which presents the highest mortality—the average of phthisis pulmonalis is low, owing very probably to the circum-

stance that fevers are of the most fatal tendency, terminating either in speedy death or rapid recovery. At the south-western stations, and those along our middle coast, the malarial poison acts more slowly, thus developing, by a gradual deterioration of the constitution, a tubercular form of consumption. It follows then that a continuous residence in the south, so far from being beneficial in this disease, will often hasten its fatal issue. This fact does not, however, in the least militate against the doctrine which maintains that advantage will be derived from change of climate in the way of a winter residence; and so far as regards the propriety of the measure in *chronic bronchitis*, no reasonable doubt can be entertained.

Reference has already been made to the British army statistics, the results of which, it is alleged, show "a striking contradiction to the popular idea" in relation to pulmonary diseases. The conclusion of the reporter that this class of diseases is more prevalent in southern than northern latitudes, it has been seen, is the result of hasty generalisation. It has been demonstrated, for example, that the prevailing low temperature of the coast of New England, and the predominating high temperature of our southern coast, present each a lower ratio than the variable climate of the intervening region, characterized by the extremes of both. Having averred that the reporter's deductions are in many respects unwarranted by the numerical results, a proper respect for the opinion of others, more especially when emanating from high authority, requires, so far as the limits of this paper will admit, a statement of the general grounds upon which this declaration rests.

England has been assumed as the standard of comparison. Now, it is well known that the range of the thermometer is not greater in England than in Italy, and that the difference in the mean temperature of summer and winter is actually less. In regard to the difference of winter and summer, the ratios stand thus:—Penzance 15°.84, Edinburg 17°.90, London 23° .20, Italy 27°.26 and southwest of France 26°.42. In our own country, the results are very different, as Fort Snelling, Iowa, 55°.51, Fort Brady, Mich., 40°.87, Washington city 38°.98, Jefferson barracks, Missouri, 41° .17, Fort Gibson, Arkansas, 36°.83, Augusta Arsenal, Georgia, 30°.55, Fort Brooke, Florida 16°.02, and Key West 11°.34. As the summer heats of England never rise so high or are so long continued as to render the animal economy very susceptible to the influence of the opposite conditions, it follows that the ratio of pulmonic lesions must be low. When this fact is taken in connection with another just developed, viz; that positions bordering large bodies of water, by which the extremes of temperature are moderated, whilst the air is moist and the seasons characterized by variableness, exhibit a lower ratio of pulmonary diseases than localities under opposite circumstances, the selection of England as a standard of comparison, illustrates strongly the impropriety of basing a classification of climates on mere latitude.

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The high mortality of the southern regions is caused by the Middle Division of the United States, the average on our southern coast being comparatively low. Taking the statistics of the posts in East Florida, and those on the Lower Mississippi, the ratio of phthisis pulmonalis is found to be only 1.7, and that of the remaining lesions of this class to be no more than 0.7 per 1000 of mean strength. It is also ascertained that these diseases are of a more fatal tendency in the Southern than in the Northern Regions. In the latter, the ratio of mortality from phthisis pulmonalis is 32, and in the former, 42 per hundred cases; and as regards pleuritis and pneumonia, the difference is much greater, the average mortality in the Northern being 9, and in the Southern, 26 per thousand cases. It is necessary to add, however, that this high mortality is limited to the south-western posts, 33 deaths, (out of 40—the total of the four southern classes,) being reported in this class.

These statistics then show that as regards pneumonia, pleuritis, and phthisis pulmonalis, the ratio of cases and deaths is greater in our middle regions, including the south-western stations, than at either extreme. In endeavouring to account for this result, much may, perhaps, be due to the circumstance that the subjects are generally from the Northern States, or from Europe. It may be safely asserted, as has been already remarked, that the majority of cases of consumption at our southern posts supervene upon febrile diseases, more especially in constitutions broken down by intemperance, bearing the same relation to fevers as those other sequelæ—dropsy, jaundice, and the various chronic lesions of the viscera. On the Lower Mississippi—a class of posts which presents the highest mortality—the average of phthisis pulmonalis is low, owing very probably to the circum-

stance that fevers are of the most fatal tendency, terminating either in speedy death or rapid recovery. At the south-western stations, and those along our middle coast, the malarial poison acts more slowly, thus developing, by a gradual deterioration of the constitution, a tubercular form of consumption. It follows then that a continuous residence in the south, so far from being beneficial in this disease, will often hasten its fatal issue. This fact does not, however, in the least militate against the doctrine which maintains that advantage will be derived from change of climate in the way of a winter residence; and so far as regards the propriety of the measure in *chronic bronchitis*, no reasonable doubt can be entertained.

Reference has already been made to the British army statistics, the results of which, it is alleged, show "a striking contradiction to the popular idea" in relation to pulmonary diseases. The conclusion of the reporter that this class of diseases is more prevalent in southern than northern latitudes, it has been seen, is the result of hasty generalisation. It has been demonstrated, for example, that the prevailing low temperature of the coast of New England, and the predominating high temperature of our southern coast, present each a lower ratio than the variable climate of the intervening region, characterized by the extremes of both. Having averred that the reporter's deductions are in many respects unwarranted by the numerical results, a proper respect for the opinion of others, more especially when emanating from high authority, requires, so far as the limits of this paper will admit, a statement of the general grounds upon which this declaration rests.

England has been assumed as the standard of comparison. Now, it is well known that the range of the thermometer is not greater in England than in Italy, and that the difference in the mean temperature of summer and winter is actually less. In regard to the difference of winter and summer, the ratios stand thus:—Penzance 15°.84, Edinburg 17°.90, London 23° .20, Italy 27°.26 and southwest of France 26°.42. In our own country, the results are very different, as Fort Snelling, Iowa, 55°.51, Fort Brady, Mich., 40°.87, Washington city 38°.98, Jefferson barracks, Missouri, 41° .17, Fort Gibson, Arkansas, 36°.83, Augusta Arsenal, Georgia, 30°.55, Fort Brooke, Florida 16°.02, and Key West 11°.34. As the summer heats of England never rise so high or are so long continued as to render the animal economy very susceptible to the influence of the opposite conditions, it follows that the ratio of pulmonic lesions must be low. When this fact is taken in connection with another just developed, viz; that positions bordering large bodies of water, by which the extremes of temperature are moderated, whilst the air is moist and the seasons characterized by variableness, exhibit a lower ratio of pulmonary diseases than localities under opposite circumstances, the selection of England as a standard of comparison, illustrates strongly the impropriety of basing a classification of climates on mere latitude.

The reporter takes the ground that a comparison of the ratio annually

attacked out of a given number in different countries, presents the most accurate method of determining the relative agency of climate in the causation of particular diseases, more especially if these investigations extend over a long series of years, and include large masses of individuals. Now, this remark is true, provided the comparisons, unlike the various British commands, are instituted among the natives of each region.

The reporter has fallen into the error of comparing the *lowest* average in one command with the *highest* in another, by which all his deductions in reference to pulmonary diseases have become vitiated. The fallacy of the conclusion that pulmonary consumption is more prevalent and fatal in the West Indies than in England, appears from the single fact that he dwells particularly upon a comparison of the results afforded by the Windward and Leeward command of the former, and the Dragoon guards and Dragoons of the latter, thus assuming, on the one hand, the *highest*, and on the other, the *lowest* mortality as comparative averages. The high ratio of the Foot Guards in England is set aside as "an exception," because it appears "attributable to other causes than the climate of the metropolis," whilst that of the Windward and Leeward command stands forth in bold relief, notwithstanding he thinks it "not attributable to climate only, but also to some peculiarity from which officers are exempt." Taking the aggregate strength and aggregate mortality from diseases of the lungs of all the white troops in the West Indies and of all the commands in the United Kingdom, the result is in favour of the former. Were even the mortality higher than in England, it would not be surprising; for here are men, from a foreign land, exposed, through all seasons, to a continuous high temperature. As pulmonary consumption, in hot climates, is doubtless often induced by the deterioration which the constitution, especially in cases of intemperate habits, undergoes from repeated attacks of febrile and d[illegible]enteric lesions, a prolific source of mortality is presented in the West Indies. As the prevailing idea in regard to the advantages of acclimatization is disproved by statistical investigations, not only in the West Indies, but all other climates in which British troops are stationed, it follows that the causes assumed as exercising a powerful agency in the production of phthisis pulmonalis, in proportion as the conservative powers of the constitution give way, are uniformly progressive in their fatal tendency.

At first view, the advantage of a winter residence in the West Indies to a pulmonary invalid, may seem problematical; but this deception vanishes when we call to mind the fact that these diseases, as a class, are more under the influence of the seasons than intermitting fever. A continuous residence in these islands would no doubt hasten the fatal issue in a case of tubercular consumption, but the objections on this score are wholly limited to the summer season. Although the reporter remarks on "the baneful influence of the climate of the West Indies in accelerating the progress of consumption," yet it is found that the annual ratio of mortality from hæmoptysis and

phthisis pulmonalis is only 6.1 per 1000, exclusive of those sent home as invalids, whilst that of the United Kingdom is 8.2. Now could we institute a comparison between the civil population of England and the natives of the West Indies, correct results might be obtained.

If we compare the ratio given by all the commands in England with that of the Mediterranean commands, Gibraltar, Malta and the Ionian Islands—the result, contrary to every conclusion of the reporter, is decidedly favourable to the latter. In the United Kingdom, the annual ratio of mortality from hæmoptysis and phthisis pulmonalis is 8.2 per 1000 of the strength; whilst at Gibraltar it is only 3.6, at Malta 3.7, and at the Ionian Islands 2.9, but as some consumptive patients in the Mediterranean commands were invalided, these ratios are somewhat too low. In regard to the civil population of Malta, the reporter adds:—"Nor is the fatal influence of diseases of the lungs confined to the troops alone; it extends in a corresponding degree to the inhabitants." It will be observed that deaths are reported by the Maltese medical practitioners under the different heads of consumption and phthisis pulmonalis. "The former," the reporter says, "is understood principally to refer to that class of consumptive cases more generally designated *marasmus*, which term has been adopted in the returns since 1831. They are understood to have occurred *principally among children and old persons*." Not content to include under the class of diseases of the lungs the cases of marasmus reported as consumption prior to 1831, he also takes those *reported as marasmus* subsequently to that period. Excluding the cases of marasmus, the ratio of mortality from hæmoptysis and phthisis pulmonalis is reduced to 1.1, and that from all diseases of the lungs, to 3 per 1000. The fatality of pleuritis and pneumonia is not half so great as among the troops. Consequently, the mortality from all diseases of the lungs among the civil population is not more than half as high as among the troops, and not one third as great as the average of the several commands in the United Kingdom. As truth never lies in extremes, so the ratio of hæmoptysis and phthisis pulmonalis, including *one half* of the cases of marasmus, is 2.2, which is much lower than among the military, and only one-fourth of the average in England.

This view of the results of the several Mediterranean commands, leads to conclusions diametrically adverse to those deduced by the reporter. So far from the climate being unfavourable to persons predisposed to pulmonary diseases, it is satisfactorily shown that it is even advantageous as a continuous residence. Hence, to the pulmonic invalid of more northern latitudes, who seeks this climate merely as a winter retreat, the beneficial results must be incalculable. Were even the correctness of the reporter's deductions admitted, it would not militate against the principles established in relation to the influence of the seasons. In no event, then, can the pulmonic of England be in error, in visiting the Mediterranean as a winter residence.

In Nova Scotia and New Brunswick, as well as in Upper and Lower

Canada, the ratio of admissions and deaths from diseases of the lungs is considerably below that of the United Kingdom. As this is a region in which cold predominates, the result is no ways surprising; for, notwithstanding "the variation sometimes exceeds 50° in the course of a few hours," it is in harmony with, and thus confirms the laws established in relation to, the systems of climate pertaining to the United States.

The results given by Major Tulloch's latest statistical Reports "on the sickness, mortality, and invaliding among the troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius," afford no confirmation of his favourite views in regard to pulmonary diseases. We are told, for example, "that among 71,850 native troops serving in the Madras Presidency, the deaths by every description of disease of the lungs did not, on the average of five years, exceed *one per thousand* of the strength annually. Here then, unlike the island of Malta, is presented a fair standard of mortality from all pulmonary diseases among native troops; and compared with the ratio of Great Britain, it is found to be only one-tenth as high. On the western coast of Africa, the ratio of mortality from diseases of the lungs among British troops, is 4.9 per 1000, in St. Helena 3.2, and at the Cape of Good Hope 3.9, whilst at the Mauritius, the average is nearly twice as high as the last. As the ratio of the United Kingdom is 10.1, these results, like all others, are much in favour of southern latitudes. The ratio of admissions by the class of pulmonary diseases is much the same at the Cape of Good Hope and the Mauritius, the great source of mortality in the latter arising from consumption. This fact confirms the oft-repeated opinion, that the ratios of phthisis pulmonalis in general and the other diseases of the lungs have no apparent relation.

These general conclusions are confirmed by statistical facts in a recent edition of M. Laennec's work, edited by M. Andral. It is found that phthisis, as in the middle regions of the United States, is much more frequent in the temperate regions of Europe, comprised between the 55th and the 45th degree of latitude, than it is further to the north. Whilst in London it is calculated that 236 of every 1000 deaths is caused by pulmonary phthisis, in Sweden the ratio is only 63. At St. Petersburg and Stockholm, it is much less destructive than throughout Germany, and more especially at Berlin, Munich, Vienna, and Paris. In the southern parts of Europe, from the 45th to the 35th parallel, it is still found to be a very common disease. That a cold temperature is not essentially *per se* favourable to the developement of phthisis pulmonalis, as well as pleuritis and pneumonia, seems, therefore, an established point.

No attempt is here made to analyze critically the results of the British statistics, but rather to adduce the foregoing facts in confirmation of the doctrines established in reference to the systems of climate pertaining to the United States. In the British Commands investigated, the reporter had to deal entirely with regions characterised by a mild insular climate, or those

in which a low temperature predominates; and as the contrasted seasons of an excessive climate like ours was not brought under his observation, his means of arriving at truth were restricted. Even when referring for illustrations to the countries of other nations, he falls into a like error; for when discussing the climate of Malta in relation to pulmonic affections, he refers to Sweden as a region which ought to afford opposite results. Now had returns from the middle regions of Europe fallen into his hands, the deductions, it has just been seen, would have been widely different. And here again, we have meteorological facts that afford mutual corroboration. Moscow, for example, in lat. 56°, according to Humboldt, has the same mean summer temperature as Loire in France, in lat, 46°; and in Scotland, in lat. 57°, the winters are more mild than at Milan, in lat. 45° 28.'

As *rheumatism* pertains to that class of diseases for which a winter residence in southern latitudes is often recommended, a few inquiries in regard to its etiology will be instituted. This subject, like the preceding one, is of such a nature that the experience of the civil practitioner is on too limited a scale, and too immethodical in its character, to warrant general conclusions, and although generally unsafe to disagree with mankind in matters of daily observation, yet it would not be surprising were the commonly received opinions upon a question of such magnitude, to prove, when submitted to the test of numbers, to be founded in error. The following table, condensed from abstract No. 1 of Appendix, exhibits the annual and quarterly ratios of rheumatic cases, treated per 1000 of strength, on an average of 10 years, in each system of climate:—

Ratio of Rheumatic Diseases.

Divisions.	Systems of Climate.	Ratio of cases per 1000 of strength.				
		First Quarter.	Second Quarter.	Third Quarter	Fourth Qnarter.	Annual Ratio.
Sou. Mid. North'n.	1st Class. Coast of New England, - - - -	24	28	29	30	110
	2d Class. Posts on Northern chain of Lakes, - -	41	37	36	38	151
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - -	45	48	37	34	166
	1st Class. Coast from Delaware Bay to Savannah, -	37	36	27	24	126
	2d Class. South-western stations, - - - -	36	31	20	27	112
	1st Class. Posts on the lower Mississippi, - -	28	16	22	23	90
	2d Class. Posts in the Peninsula of East Florida, -	38	23	30	26	119
	Total,	249	219	201	202	

It thus appears that these diseases, which are generally ascribed to sudden variations of temperature conjoined with excess of moisture, are less under the influence of atmospheric agency than is commonly supposed. It is evident, however, that these affections are, in some measure, controlled by

the same laws which govern pulmonary diseases. Were cold, moisture, and sudden alternations of temperature, powerful exciting causes, the highest ratio should be given on the New England coast and the northern chain of lakes; on the contrary, it is found that, like pulmonic lesions, the disease is most rife in the dry and cold atmosphere of the interior, (the third class of the Northern division,) characterised by the extreme range of the thermometer and by seasons strongly contrasted. In the middle division, the first class, it is true, is higher than the second; but if the results of Fort Monroe, as in the calculations in regard to pulmonary diseases, are excluded, the annual average of the former is reduced to 93. In the northern division, the annual ratio of cases, per centum of the strength, is 15, whilst the mean of the middle and southern division is 11. Among 6257 cases registered, only one death is reported.

Were these affections much under the influence of meteorological causes, so far as regards variations of temperature, we should find, as in pulmonic lesions, a great contrast in the ratios of the seasons. Taking the totals of the four seasons, as shown in the table just given, the first and second quarters give the highest averages; but, contrary to the law which governs pulmonary diseases, the ratios of the third and the fourth are the same. Viewing the whole subject, however, it is found that a similarity obtains in the general laws which, on the one hand, govern rheumatic, and, on the other, pulmonary, but more especially catarrhal diseases.

These views are confirmed by the results given in the following abstract from the recent reports upon the medical statistics of the British troops:—

Admissions from Rheumatic Affections annually per 1000 of mean strength,	Jamaica.	Nova Scotia and New Brunswick.	Bermudas.	Malta.	Ionian Islands.	Gibraltar.	Canada.	Mauritius.	Windward and Leeward Command, West Indies.	United Kingdom.	Cape of Good Hope.
	29	30	33	34	34½	38	40	46	49	50	57

The reporter here directs attention to the fact that rheumatic diseases are more prevalent in the Mediterranean than in Canada and Nova Scotia, and that "though some of the provinces of the Cape of Good Hope have occasionally been without rain for several years, these diseases are more frequent in the dry climate of that command, than in the West Indies where the condition of the atmosphere is as remarkably the reverse; yet have extreme cold and atmospheric vicissitudes, coupled with excess of moisture, been assigned as satisfactory causes for their prevalence." Between the ratio of Canada and that of Nova Scotia and New Brunswick, the former being one

third higher than the latter, the same law obtains as in the United States. Whilst in Canada the cold becomes so intense that the mercury congealed in the thermometer, serves no longer to indicate the extreme reduction of the temperature; in Nova Scotia, on the contrary, the mercury is seldom lower than 6° or 8° below zero in winter, or above 88° in summer—a modification arising from the insular character of the province, which is likewise so much intersected by lakes and bays, that nearly one third of its surface is under water. Notwithstanding the atmosphere is consequently exceedingly moist, and fogs are along the coast common throughout the year—a circumstance regarded as most favourable for the production of rheumatism—yet it is seen that the ratio is lower than in the dry and intensely cold climate of Canada. If the average of Nova Scotia were given distinct from that of New Brunswick, a more striking contrast, it is very probable, would be revealed. At all events, the opinion that rheumatic affections, like those of the lungs, obey, in some measure, the inflections of the isotheral and isocheimal curves, is warranted.

It will be observed that the annual ratio of rheumatic affections is two and three-fold greater among our troops than among the British, and that the same relation obtains in regard to pulmonary diseases. This may arise in some measure from the mode of reporting. In our service, all cases of disease, more especially of late years, are registered—those in hospital as well as those in quarters, whilst the British statistics, it would seem, contain only cases of admission into hospital. Much, however, is to be ascribed to the nature of the region we inhabit, which lies in the middle latitudes of the eastern side of a continent prolonged towards the poles. It is, therefore, emphatically an *excessive* climate, exhibiting the greatest range of temperature and the most marked distinction of seasons, whilst all the regions of the British commands are either mild insular climates or those in which a low temperature predominates.

Among the various systems of climate presented in the extensive region of the United States, that of the Peninsula of Florida is wholly peculiar. Possessing an insular temperature not less equable and salubrious in winter than that afforded by the south of Europe, it will be seen that invalids requiring a mild winter residence, have gone to foreign lands in search of what might have been found at home. Florida, therefore, merits the attention of physicians at the north; for here the pulmonary invalid may exchange for the inclement season of the north, or the deteriorated atmosphere of a room to which he may be confined, the mild and equable temperature, the soft and balmy breezes, of an ever-green land in which wild flowers never cease to unfold their petals.

From the earliest period, change of climate has been regarded as a remedial agent of great efficacy. This opinion is, indeed, confirmed by daily experience. Diseases that have long resisted medical treatment, are frequently suspended or entirely cured by a removal from a crowded city to an

open country, or are found to yield, under the influence of such a change, to remedies that previously produced no impression.

Although the influence of different climates in the causation as well as the alleviation and cure of diseases, is a fact universally conceded; yet there is, perhaps, nothing in general science more unsatisfactory than the attempts hitherto made to explain the *modus operandi* of this power. This, however, will not be a matter of surprise, when it is recollected that the problem of physical climate remains, in a great measure, unsolved. How much more complicated then must the subject become, when involved with the elements of organic life, and all the complexity of their combinations resulting from health and disease.

Climate, indeed, modifies both the moral and physical nature of man. Each region of the globe presents peculiarities in regard to such organic modifications. The inhabitants of the same continent, as the German from the French, or the Esquimaux from the Southern Indian, may be readily distinguished. In casting one's eye over our National Legislature, the same diversity of physiognomy is apparent. The general countenance of each State's delegation is, indeed, a pretty sure criterion to judge of its comparative salubrity. We can at once distinguish the ruddy inhabitant of that mountain chain, where health and longevity walk hand in hand, where Jefferson and Madison inspired its cheerful and invigorating breezes, from the blanched resident of the sunny south—that fair and inviting land, whose fragrant zephyrs are laden with poison—the dews of whose summer evenings are replete with the seeds of mortality.

As erroneous impressions pervade the public mind in relation to the climate of East Florida as regards its comparative salubrity, it may not be inappropriate, before entering upon a special description, to give some general results based upon numerical calculations. These results, like those already given, are founded upon official papers on file in the War Department, the details of which constitute an official report on the vital statistics of the army, and the medical topography of the military stations.

According to the regimental returns, the ratio of mortality among the troops serving in Florida, from all causes—"ordinary, killed in action, died of wounds, and accidental"—during the years 1836, 1837, 1838, 1839, is 6.1 per cent. The annual average exhibits a progressive decrease, being in 1836, 11.4; in 1837, 6.9; in 1838, 4.7; and in 1839, 4.7 per cent. The ratio of mortality among these troops varies little from that of garrisons stationed in the south in time of peace—a fact established by the results of statistical investigations, and confirmed by the subjoined table, which exhibits, for the period of ten years, the average mortality of the army, computed by regiments:

Years.	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	Average.
Ratio of deaths per 1000 of mean strength annually.	36	32	29	68	30	57	49	48	53	42	44

The most conclusive evidence upon this point, is here afforded in the fact that although more than one-third of the actual strength of the army served in Florida in 1838, yet the mortality of the whole army for that year is only 4.2 per cent., a ratio lower than the mean of ten years. The ratio of mortality among the regular troops operating against the Seminoles, on an average of four years, is considerably lower than that of the 4th regiment of infantry for the period of the ten years embraced in the table just given. This regiment, which has borne the "tug of war" amid ungenial climes, presents the highest ratio, 7.6 per cent.; whilst the 5th infantry, which has had a kind of *home* station on the northern lakes, exhibits the lowest mortality, 1.3 per cent.

That the mortality among the invalids sent out of Florida will increase the ratio, may be supposed; but it is found, on investigation, that the result is not materially affected. Amongst the invalids that left Florida during the years 1836, 1837, and 1838, no more than 17 deaths can be traced. Including these fatal cases, the annual mortality in Florida from all causes, is increased from 6.1 to 6.3 per cent.

Prior to the pending hostilities, four permanent posts were maintained in East Florida, viz: Forts Marion, King, Brooke, and Key West. The annual mortality at the first three is 28 per 1000, and including Key West, it rises to 40. Although the climate of this region is treated of merely in reference to its fitness as a winter residence, yet it may not be amiss to give a general view of the relative mortality of the troops in the different sections of the United States, based on an average of 10 years.

Divisions.	Systems of Climate.	Aggregate mean strength.	Annual ratio of mortality per 1000 of strength.	
			Adj. General's returns.	Medical returns.
North'n.	1st Class. Coast of New England, - - - -	4279	20	15
	2d Class. Posts on Northern chain of Lakes, - -	6377	13	9
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - - -	12790	14	8
	Average,	23446	15	9
Sou. Mid.	1st Class. Coast from Delaware Bay to Savannah, - -	6740	34	30
	2d Class. South-western stations, - - - - -	11739	45	36
	1st Class. Posts on the lower Mississippi, - - -	3810	53	44
	2d Class. Posts in the Peninsula of Florida, - - -	4781	39	26
	Average,	27070	42	34
	Mean of the United States,	50516	30	22

It thus appears that in the northern division, the mortality, according to the Adjutant General's returns, is 1.5 per cent., and, according to the medical returns, 0.9 per cent.; and in the middle and southern divisions, according to the former, the mean is 4.2, and according to the latter, 3.4, per cent. In this calculation, the deaths from epidemic cholera have been excluded from both classes of returns; and from the medical reports, such deaths also as arose from homicide, suicide, asphyxia from cold, submersion, etc. The former exhibits the ratio of mortality from *all* causes, with the exception of Asiatic cholera, as reported in the post returns by the commanding officer; whilst the latter, as it shows the mortality arising from diseases chiefly, may be regarded as a pretty fair expression of climatic influence. In the middle and southern divisions, the ratio of mortality, according to the medical returns, is nearly four-fold greater than in the northern, and according to the post returns nearly three times higher. Our northern latitudes exhibit little variation in the annual mortality; but the southern, in consequence of more fatal epidemic visitations, show great extremes. It must be borne in mind that in the latter the troops consist mostly of northern constitutions impaired by intemperate habits. In the above abstract, the aggregate of deaths is 1104, more than one half of which may be traced to the effects of inebriation—a vice which, according to these statistics, may be indulged in our northern States as contrasted with the southern, with comparative impunity.

With the exception of the northern division, the mortality from disease is lower in east Florida than in any other class of posts. Forts Marion, King and Brooke, which have been kept up for many years, have always been esteemed healthy posts. Fevers of the intermittent and remittent type are the prevailing diseases. Excepting the southwestern region, the ratio of intermittents is higher in this class than in any other; but if the comparison is limited, for example, to Fort M'Henry, (Baltimore,) Fort Severn, (Annapolis,) and Fort Washington, opposite Mount Vernon, it is found favourable to the former, notwithstanding the garrisons of these northern posts generally formed summer encampments. As regards remittents in east Florida, the annual ratio of cases, which is 102 per 1000 of the strength, is lower than the three preceding classes in the table, whose respective averages are 181, 180, and 196. In the first class of the middle as well as of the southern division, febrile action often assumes the high grade of intensity designated *yellow fever*. Whilst the causes of this fatal endemic seem to be annually present at Charleston and New Orleans, it has made its appearance but twice at St. Augustine within the period of 20 years.

Fevers of malarial origin are both more prevalent and fatal in that portion of Florida which borders on Georgia. Along the coast, and in many parts of the interior, salubrious positions are often found. At several posts along the eastern coast, a case of fever has sometimes not been reported in three or six months. Other localities, the stations being often selected less with

reference to salubrity than military advantage, are not unfrequently very unhealthy.

In treating of the climate of Florida, the primary object held in view is, to direct attention to its fitness as a *winter* residence for northern invalids. In 1833, Professor Dunglison called the attention of the profession, on the strength of the meteorological registers kept by the medical staff of the army, to the suitableness of St. Augustine and Tampa Bay as a winter retreat. An examination of abstract No. 2, of Appendix, showing—1. The mean temperature of each month, each season, and the whole year; 2. The difference between the mean temperature of each month and season; and 3. The annual and monthly ranges of temperature—will, it is believed, not only furnish further confirmation of the doctrines already conclusively established, but lead to results of great value to the practical physician.

The results of the four posts in abstract No. 2 of Appendix, illustrate the modifying agency of large bodies of water. Fort King, situated in the interior, has a warmer summer and a colder winter than the remaining stations, all of which are on the coast. Although Key West is 4°39′ south of Fort King, and has a mean annual temperature 3°.43 higher, yet the mean summer temperature is 2°.81 lower. The equalizing influence of the ocean is still further shown by the annual range of the thermometer, the mean of the monthly ranges, and the mean difference of successive seasons. During the summer months, the morning and evening observations are nearly the same at both points, the disparity being caused by the exalted temperature of Fort King at mid-day. In each year, July was the hottest month at Key West, and the month of June at Fort King. As is usual in southern latitudes, there is little variation presented at Key West in the mean temperature of the same month in different years.

There is little difference between the thermometrical phenomena presented at Key West and the Havanna. Within the period of six years, (from 1830 to 1835 inclusive,) the mercury at Key West was never known to rise higher than 90°, nor sink lower than 44°.

The peculiar character of the climate of Florida, as distinguished from that of more northern latitudes, consists less in the mean annual temperature than in the manner of its distribution throughout the year. At Fort Snelling; Iowa, the mean temperature of winter is 17°.29, and of summer, 72°.80, whilst at Fort Brooke, Tampa Bay, the former is 65°.02, and the latter 81°.04 and at Key West, 70°.05 and 81°.39. Notwithstanding the winter at Fort Snelling is 52°.76 colder than at Key West, the summer, at the latter is only 8°.59 warmer. In like manner, although the mean annual temperature of Petite Coquille, La., is nearly 2° lower—that of Augusta Arsenal, Ga., nearly 8°—and that of Fort Gibson, Arkansas, upwards of 10° lower, than that of Fort Brooke; yet at all, the mean summer temperature is higher. Between Fort Snelling on the one hand, and Fort Brooke and Key West on the other, the relative distribution of temperature stands

thus:—Difference of the mean temperature of summer and winter at the former 55°.51, and at the two latter 16°.02 and 11°.34; difference of the mean temperature of the warmest and coldest month, 61°.18 compared with 17°.68 and 14°.66; and the mean difference of successive months stands as 10°.20 to 2°.97 and 2°.44. At Fort Snelling, the annual range of the thermometer is 116°, and at Fort Brooke and Key West it is 56° and 37°; and the mean of the monthly ranges bears the relation of 50° to 29° and 16°. The attention is thus directed merely to a few prominent points, as a reference to the tabular abstract will enable any one to trace much farther this remarkable equality in the distribution of temperature among the seasons in Florida. A comparison with the most favoured situations on the continent of Europe, and the islands held in highest estimation for mildness and equability of climate, affords results no way disparaging. A comparison of the mean temperature of winter and summer, that of the warmest and coldest months, and that of successive months and seasons, furnishes results generally in favour of the peninsula of Florida. The mean difference of successive months stands thus:—Pisa 5°.75, Naples 5°.08, Nice 4°.74, Rome 4°.39, Fort King 4°.28, Fort Marion, at St. Augustine, 3°.55, Penzance, England, 3°.05, Fort Brooke 2°.97, Key West 2°.44, Madeira 2°.41. The mean annual range thus;—Fort King 78°, Naples 64°, Rome 62°, Nice 60°, Montpellier 59°, St. Augustine 59°, Fort Brooke 56°, Penzance 49°, Key West 37°, and Maderia 23°.* The island of Madeira is esteemed by Dr. Clark as best adapted to consumptive patients.

In the West India islands, the mean annual temperature near the sea is only about 80°. At Barbadoes, the mean temperature of the season is—winter 76°, spring 79°, summer 81°, and autumn 80°. The temperature is remarkably uniform; for the mean annual range of the thermometer, even in the most variable of the islands, is only 13°, and in some it is not more than 4°.† Contrast this with Fort Snelling, Iowa, which gives a range of 116°!

It has been seen that the meteorological agents which determine the ratio of pulmonic lesions, causing the first and fourth quarters to present the highest averages, and the third the lowest, is the marked distinction of season characterized by extremes of temperature. Hence the apparent exception to this rule in the system of climate pertaining to East Florida, where the third quarter has a higher ratio than the second or fourth, (see Table p. 21,) instead of contradicting a general law, corroborates it. As Florida is an ever-green land, the influence of the seasons does not impress the pulmonary organs sufficiently to derange their functions by their transition. Hence the ratio of pulmonic lesions is low; and as the causes which are secondary in excessive climates, grow here into primary ones, these diseases may be as rife in the summer as in the spring or autumn.

* Contrary to the numerical ratios furnished in his tables, Dr. Clark says that "the mean annual range of temperature is only 14°"—an error which has crept into the writings of Dr. Dunglison.

† According to the British army statistics.

The state of the weather as indicated by the course of the winds and the proportion of fair and cloudy days, calculated for the same years as abstract No. 2 of Appendix, is shown in the following table:—

Places of Observation.	Course of Winds.								Prevailing.	Weather.			Prevailing.
	N.	N.W.	N. E.	E.	S. E.	S.	S. W	W.		Fair.	Cloudy.	Rain.	
	Days.	Days.	Days.	Days.	Days.	Days.	Days.	Days.		Days.	Days.	Days.	
St. Augustine,	1.55	2.86	9.08	1.03	10.83	1.11	2 64	1.33	S. E.	19.02	5.19	6.22	Fair.
Fort King,	1.62	2.79	3.46	3.54	4.37	5.63	5.96	3.08	S.W.	25.75	2.88	1.89	Fair.
Fort Brooke,	1.53	3.72	5.58	2.89	4.44	2.75	6.42	3.17	S.W.	20.33	4.47	5.64	Fair.
Key West,	3.20	3.13	10.50	5.37	5 37	0.54	1.67	0.38	N.E.	21.54	3.08	5.92	Fair.

The want of hygrometrical observations to indicate the actual or comparative humidity of the atmosphere is to be regretted. That the air is much more humid than in our more northern regions is sufficiently cognizable to the senses. The dews, even in the winter, are generally very heavy. To guard against the oxidation of metals, as for example surgical instruments, is a matter of extreme difficulty. During the summer, books become covered with mould, and keys rust in one's pocket. *Fungi* flourish luxuriantly. The writer has known a substance of this kind spring up in one night, and so incorporate itself with the tissue of a woollen garment as to render separation impracticable. As general relaxation and lassitude are consequent on this prevailing humidity, it may exercise some agency in the production of the comparatively high ratio of pulmonic and rheumatic affections in the summer season. One of the best safeguards against its effects is, to wear flannel next the skin—a custom generally adopted in the army. It is, indeed, a hygienic measure no less valuable in warm than in cold climates, affording comparative immunity against thermometrical and hygrometrical vicissitudes.

As the rains, however, generally fall at a particular season, so the atmosphere in winter is comparatively dry and serene. The following abstract of the monthly fall of rain at Key West, is the mean result of five years' observation:—

Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sep.*	*Oct.*	*Nov.*	*Dec.*	*Annual average.*
1.82	1.34	1.98	1.09	6.34	2.39	2.84	3.30	4.35	3.33	1.49	1.13	31.40

It will be observed that during six months, from November to May, which is the longest period that a northern invalid should remain in this climate, the proportion of rain is but 8.84 inches. It has been already remarked that in tropical climates a portion of the year is known as the rainy season, and that the same quantity descends in a much shorter space of time than in the temperate zone; and that consequently the proportion of fair days and clear skies is infinitely in favour of the former. In the table

of the weather just given, in which the ratios are monthly averages, this result is strikingly manifested. At Fort King, the annual number of fair days is 309, whilst on the northern lakes, it is only 119. On the coast of Florida, however, the average is not more than 250 days.

The influence of temperature on the living body is often indicated more accurately by our sensations than the thermometer. The advantages of climate as regards its fitness for the pulmonic, not unfrequently depend on the mere circumstance of exposure to, or shelter from cold winds. The frequency and severity of the winds at St. Augustine constitute a considerable drawback on the benefits of the climate. The chilly northeast blast, surcharged with fogs and saline vapours, sweeping around every angle of its ancient and dilapidated walls, often forbids the valetudinarian venturing from his domicil. To obviate these disadvantages, a large house was erected at Picolata on the St. John's; but during the pending Indian disturbances, it has been converted into a barrack and an hospital.

To persons labouring under an irritable state of the bronchial membrane, high winds are particularly injurious. If the consumptive invalid have much sensibility to harsh and keen winds, and if the immediate vicinity of the sea be known to disagree, Fort King ought to be recommended before St. Augustine or even Fort Brooke; but as sea-air is known to be generally adapted to a relaxed habit and a languid and oppressed circulation, a favourable position on the coast should, in such cases, be selected as a winter residence.

The natural advantages of position, without reference to extrinsic circumstances are now under discussion. St. Augustine is on the eastern coast; Fort Brooke is at the head of Tampa Bay,* about 30 miles from the Gulf of Mexico; Fort King is intermediate to these two points; and Key West belongs to the Archipelago south of Cape Sable. The pending hostilities with the Aborigines, and the difficulty of obtaining accommodations indispensable to the comfort of the invalid, render a winter retreat almost impracticable any where but at St. Augustine or Key West. The oldest town in the United States, and built mostly of a concrete shelly stone in the Spanish style, St. Augustine presents an antiquated appearance, enlivened by beautiful orange-groves bending at due season beneath their golden fruit.† The old Spanish fort and the *tout ensemble* of the city, give it more the resemblance of a place of defence than of elegance; but it is these circumstances which associate it with history, and render it peculiarly interesting to the American traveller. Moreover, the inhabitants extend kindness and hospitality towards strangers. Key West, about 60 miles southwest of Cape Sable, is two

* The old Spanish appellation was Espiritu Santo, or bay of the Holy Ghost, the name Tampa being then restricted to an arm.

† In 1835, nearly all the orange trees in Florida were destroyed by frost—an occurrence previously unknown in the memory of the oldest inhabitant.

miles wide and ten long, and is remarkable as being the most southern settlement of the United States. Possessing a good harbour, it has been from time to time the station of our West India squadron. It contains about 1400 souls, and is a place of some commerce chiefly in the way of wrecked goods.

In contemplating the scenery of East Florida in the month of January, one is apt to forget that it is a winter landscape. Fort Brooke on Tampa Bay is a truly delightful spot, in which tropical fruits flourish luxuriantly. The lime, the orange, and the fig find there a genial soil, whilst the moss-covered* live-oak and the Pride of China, add beauty and variety to the scene. Vegetation is continuous through every season, culinary vegetables growing in January; and the temperature of the waters in rivers and bays will admit of bathing in every month of winter. To the northern man, all nature seems changed. Even the birds of the air—the pelican and flamingo —indicate to him a climate entirely new. Having accompanied a boat expedition, the object of which was to explore the sources of the St. Johns, the writer found, in the month of January, the high cane-grass which covers its banks intertwined with every variety of morning-glory, (*convolvulus.*) The thermometer at mid-day, in the shade, stood at 84° Fahr, and in the sun, rose to 100°; and at night we pitched no tents, but lay beneath the canopy of heaven with a screen perhaps over the face as a protection against the heavy dews. Notwithstanding the day attains such a high temperature, the mercury just before day-light often sinks to 45°, causing a very uncomfortable sensation of cold.

But there are other localities which combine advantages equally important to the pulmonary invalid. On the eastern coast of Florida, at New Smyrna for example, the warmth and softness of the air wafted from the isles of the West Indies across the gulf-stream, in the winter months, are truly grateful to the senses lulling them into repose. Even the virtuoso would not be without materials for contemplation; for here may be seen the ruins of Dr. Turnbull's colony of Greeks, Italians, and Minorcans—his unfinished castle, whose dilapidated and mouldering walls are covered with ivy, amid the luxuriance of the palm,† orange, mangrove, and magnolia. Cape Sable and the coast extending northward towards Key Biscayno, as well as the adjacent islands, would also afford an excellent winter retreat. Adapted to the

* This parasite, (*Tilandsia usneoides,*) known by the vulgar name of Spanish moss, casts a sombre aspect over the scenery of Florida. Resembling the weeping willow clothed in the garniture of hoary age, it has been styled, not inappropriately, the shades of death.

† The cabbage-palm, (*chæmarops palmetto,*) is a beautiful tree, presenting sometimes a straight column of 80 feet without a limb. The trunk is generally enclosed by the foot-stalks of the old branches, resembling a coarse net-work. The embryo head is esculent bearing the taste of unripe chesnuts. The leaf is used in the manufacture of hats, mats and baskets, as well as in the construction of the Indian's wigwam.

cultivation of tropicoid fruits, and abounding in game, fish, and turtle, this region, from the prevalence of the sea-breeze or trade-winds, presents a climate delightful even in the summer season. Key Biscayno, which is situated on the southeastern coast of Florida, affords an excellent harbour of safety and protection from the storms which frequently rage along the coast. This island is thus described by a medical officer of the army, when stationed there six months:—

"In the midst of summer, the constant prevalence of the sea-breezes renders it at all times of the day delightful in the shade. During the winter, frost is never known; nor is it ever so cold as to require the use of fire. The eastern beach commands a beautiful view of the open sea, and offers, especially during low tide, an admirable place for exercise on horseback for the distance of four or five miles, and for morning and evening walks. The waters around abound in green turtle, and a variety of excellent fish, forming a wholesome and nutritious diet, particularly well suited to cases of pulmonary disease. There is also an abundance of crawfish and crabs. The mainland is only a short distance off, abounding with deer and a variety of other kinds of game, affording a fine field for the sport and exercise of hunting; and the vicinity of the West India islands will, at all times, present the opportunity of procuring the best of the tropical fruits.

"The proprietor of the island will, in a short time, erect buildings, and will establish every means in his power for the convenience and comfort of those who may be disposed to visit the place for the recovery of their health. There has been not a single case of fever among the troops since I have been stationed here, and I have no hesitation in stating my opinion that it will be perfectly healthy at all seasons of the year."

When not exposed to the influence of malaria, the climate of Florida, as along the eastern coast, is, even in the season of summer, quite salubrious. The sea-breezes, aided by the deposition of moisture from the atmosphere, generally render the nights pleasant, even in the hottest months and in the centre of the Peninsula. The writer can state from personal knowledge that after the middle of August the nights become so cool that a blanket is desirable. The climate of the tropics is characterized, as Humboldt justly remarks, much more by the duration of heat than its intensity; and it is to the action of this unceasing high temperature that much of the injurious influence of tropical climes on northern constitutions, is to be ascribed.

But woe to the invalid that braves the torments of a summer residence under the disadvantages of a camp life! Insects are the pest of a tropical clime. As to fleas, flies, and ticks, the interior of Florida may well rival Egypt in the days of Pharaoh. The chigoes insinuate themselves beneath the skin, where they soon establish populous colonies. Flies seem, indeed, to form a component part of your food, your drink, and the atmosphere you inhale. Lizards, snakes, and scorpions, get into your bed, whilst the industrious ant and weevil not only eat your rations, but devour your books—the food

of the mind. All nature seems alive; and every hour you observe some uncouth living thing, whose family name has scarce been registered by the entomologist. In addition to these annoyances, you will have a nightly serenade performed by wolves and alligators—a woful concert of whining yells and dismal bellowings, constituting the realization of a *howling* wilderness.

Since a more rational view of the nature and causes of pulmonary diseases has prevailed, the beneficial effects of change of climate in certain forms have been fully established. Formerly, when consumptive patients were indiscriminately condemned to undergo expatriation, the unfortunate invalid often sank before he reached his destination, or he was doomed soon to add another name to the long and melancholy list of his countrymen, who seem to have sought a foreign land, far from friends and home, only to find a premature grave. When it is considered, however, that all remedial agents have proved so inefficacious in phthisis pulmonalis as to place it emphatically among the *opprobria medicorum*, it is no ways surprising that its victims should seek beneath the influence of a more genial clime, the relief, however uncertain, denied them in their own.

The south-western coast of a country is generally mild and humid, and consequently soothing but rather relaxing. In diseases accompanied with an inflammatory condition of the general system, or dependent on an excited state of particular organs, this variety of climate has been found more especially beneficial. Decided advantage may reasonably be anticipated in chronic inflammatory affections of the trachea and bronchia, attended with a dry cough and little expectoration; but when such cases occur in individuals of a languid and relaxed state of constitution, accompanied by copious expectoration from the mucous surfaces, the disease is much more likely to be aggravated than relieved. These remarks, which are made by Clark "on Climate," are equally applicable to all other diseases attended with great relaxation of the general system. It is, therefore, manifest that, in recommending a change of residence to invalids, attention to these distinctions, both in regard to varieties of climate and peculiarities of disease, is absolutely necessary.

The climate of Florida has been found beneficial in incipient cases of pulmonary consumption, and those threatened with the disease from hereditary or acquired predisposition. It is in chronic bronchial affections more particularly that it speedily manifests its salutary tendency. To distinguish the *bronchial* from the *tubercular* form of the disease, often demands considerable powers of discrimination; and upon this distinction frequently hangs the propriety of a removal to a southern clime. The application of the physical means of exploration, now so ardently cultivated, has fortunately given a greater degree of certainty to our diagnosis.

But there are other forms of disease in which such a climate as that of East Florida is not unfrequently of decided advantage. To this class

belongs *asthma.* As this term is too commonly applied to every disease in which difficulty of respiration is a prominent symptom, let us not prescribe for a mere name; but when consulted on the propriety of a change of climate, let the pathological condition of the patient be duly estimated. In simple spasmodic asthma, unconnected with organic disease, or in that form which is complicated with chronic bronchitis, or is symptomatic of primary irritation in other viscera, such as the stomach, intestines or uterus, the patient is generally much benefited. In asthma connected with affections of the heart, a mild climate often affords temporary relief. In this variety of complication, a sea-voyage is frequently of striking service.

In chronic disorders of the *digestive* organs, when no inflammation exists or structural changes have supervened in viscera important to life, but the indication is merely to remove disease of a functional character, a winter residence promises great benefit; but exercise in the open air, aided by a proper regimen, are indispensable adjuvants.

In many of those obscure affections, called *nervous*, unconnected with inflammation, exercise and travelling, in this climate, are frequently powerful and efficient remedies.

Chronic rheumatism, though apparently much less under the influence of meteorological causes than pulmonic affections, will often be benefitted by a winter residence in Florida. As these cases often resist the best directed efforts of medicine, it is the only remedy which the northern physician can recommend with a reasonable prospect of success. When the disease is complicated with much derangement of the digestive organs, it is customary in Europe to visit such places as combine the additional advantage of a course of bathing, as the mineral waters of the Pyrenees, those of Aix in Savoy, and the various baths of Italy.

When there exists a general delicacy of the constitution in childhood, often the sequel of rubeola or scarlatina, manifesting itself by symptoms indicative of a scrofulous disposition, a winter residence in a warm climate frequently produces the most salutary effects. At the period of puberty in females, a similar condition of the system often arises, preventing the development of those new functions peculiar to this stage of life. This general derangement, if not soon corrected, often results in a constitutional disorder beyond the resources of our art, denominated by Clark "*Tubercular Cachexy*," the precursor of pulmonary consumption. If the winter can be passed in a warm climate, and the patient have the advantage of exercise on horseback, warm sea-bathing, and a well regulated diet, the youthful invalid may often be rescued from an untimely grave.

Another form of disease remains to be alluded to, in which change of climate promises its healing powers, *viz.*, premature decay of the constitution, characterized by general evidence of deteriorated health, whilst some tissue or organ important to life commonly manifests symptoms of abnormal action. This remarkable change often occurs without any obvious cause,

and is not inappropriately termed in common parlance, "a breaking up of the constitution."

Let not the invalid, however, trust too much to a change of climate. Unfortunately for the character of the remedy, it has been recommended indiscriminately and without proper consideration. It has been too often resorted to as a last resource or forlorn hope; or in cases susceptible of alleviation or permanent cure, it has been wholly misapplied. One person is hurried from his native land with the certainty of having his sufferings increased and his life shortened, instead of being allowed to die in peace in his own family; whilst another, who might derive much advantage from the change, is sent abroad wholly uninstructed in regard to the selection of a proper residence, or ignorant of the various circumstances by which alone the most suitable climate can be rendered beneficial. It is one of our most powerful remedial agents, and one too which, in many cases, will admit no substitute. But much permanent advantage will result neither from travelling nor change of climate, nor their combined influence, unless the invalid adheres strictly to such regimen as his case may require. This remedy must be considered in the light of all other therapeutic means, and to ensure its proper action, it is necessary that the requisite conditions be observed.

At the present time, St. Augustine and Key West are the only places, which afford the conveniences required by the wants of an invalid; but assuming that proper accommodations can be equally obtained at all points, Key Biscayne on the southeastern coast, or Tampa Bay on the Gulf of Mexico, claims a decided preference, especially over St. Augustine. As a general rule, it would be judicious for the northern physician to direct his pulmonary patient to embark about the middle of October for Tampa Bay. Braving the perils of the wide ocean, he will realize the healthful excitement incident to the fears and hopes of a sea-voyage. Having spent the winter months at Tampa, let him proceed early in March to St. Augustine, by way of Dade's battle-ground and the old Seminole agency. In addition to the corporal exercise, he will find food for mental digestion at every step of his journey. Having thus reaped the benefit of a sea-voyage and all the advantages to be derived from a change of climate, the valetudinarian may return to his anxious friends so much renovated in health and spirits as to be capable of enjoying again the blessings of social life.

As long, however, as predatory Seminole bands retain possession of this peninsula, few itinerant invalids will imitate the example of the celebrated Spanish adventurer, Ponce de Leon, who, in the wild spirit of the 16th century, braved the perils of unknown seas and the dangers of Florida's wilds, in search of the far-famed fountain of rejuvenescence. When the period, however, of the red man's departure shall have passed, the climate of this "land of flowers" will, it may be safely predicted, acquire a celebrity as a winter residence not inferior to that of Italy, Madeira, or Southern France.

Fort Wood, *Harbour of New York, September*, 1840.

Abstract No. 1 of Appendix, showing the relative influence of the seasons in regard to Pulmonic and Rheumatic Diseases, based on 10 years' observations and an aggregate strength of 47,220—the strength being computed from the Monthly Returns in the Adjutant General's Office.

MILITARY STATIONS.	First Quarter.							Second Quarter.							Third Quarter.							Fourth Quarter.							Annual Results.						Deaths.			
	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis	Phthisis Pulmonalis.	Rheumatic affections.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.
1st Class—Northern Division.																																					
Fort Sullivan,	8	484	30	7	6	2	12	8	455	23	1	7		18	7	389	11	2	5		14	7	399	38	14	9	1	20	432	102	24	27	3	64				2
" Preble,	7	382	17	3	8		11	6	336	6	3	5	2	8	7	392	5	2	1	2	12	7	394	21	4	4	3	12	376	49	12	18	7	43				2
" Constitution,	8	443	3	3		1	4	7	371	1		4		6	7	365		3			5	7	382	26	1		1	3	390	30	7	4	2	18		1		1
" Independence,	5	564	14	85	10	1	25	5	574	5	22	19	3	27	5	570	8	31	7	3	36	4	426	6	84	3	1	25	533	33	222	39	8	113		1		2
" Wolcott,	8	429	40	4			9	7	349	11	1	5		7	7	362	4	2		1	6	7	382	38	10			7	380	93	17	5	1	29				2
" Trumbull,	8	635	36	2	6	1	15	7	516	15	1	3	2	11	7	677	21	2	3	3	9	7	588	23	1	4	2	11	604	95	6	16	8	46				4
" Columbus,	8	1081	92	2		2	20	7	998	93		4	5	24	8	907	69		4		23	9	806	104		4	2	23	948	358	2	12	9	90				4
Total, *excluding Ft. Independence,*		4018	218	21	20	6	96		3599	149	6	28	9	101		3662	110	11	13	6	105		3377	250	30	21	9	101	3663	727	68	82	30	403		1		15
Ratio per 1000,			63	6	6	2	24			49	2	9	3	28			36	3	4	2	29			85	10	7	3	30		233	22	26	9	110				
2d Class.																																					
Fort Brady,	10	1011	74	3	1	3	23	10	947	56	4	4	1	31	9	885	46	16			20	10	1004	72	10	2	3	17	962	248	33	7	7	91				1
" Mackinac,	9	948	66	1	5	1	47	8	838	47	2	12		60	8	800	50	5	10		34	8	872	40	3	12	2	41	865	203	11	39	3	182				
" Gratiot,	9	882	119	4	9		51	9	699	79	12	10	2	22	7	688	24		6	1	25	9	857	124	5	7	1	35	782	346	21	32	4	133				1
" Howard,	10	1764	129	1	11	10	89	10	1702	70	2	16	6	61	9	1526	94		25	10	39	10	1594	91	3	8	2	65	1647	384	6	60	28	274	1	1		1
" Dearborn,	7	668	30	1	6	1	20	6	542	8	1	5		8	6	579	6		4		17	6	561	18	1	5	1	11	588	62	3	20	2	56				1
" Niagara,	7	677	55	10	5	2	15	6	561	54	5	3	3	14	5	498	30	1			23	6	544	64	3	4	1	20	570	203	19	12	6	72		1		5
Madison Barracks,	4	420	102	4	6		19	4	378	38	6	3		14	4	672	32	5			26	4	773	183	3	2		48	561	355	18	11		107		2		
Total,		6370	575	24	43	17	284		5667	352	32	53	12	210		5648	282	27	45	11	204		6205	592	28	40	10	237	5975	1801	111	181	50	915	1	4		9
Ratio per 1000,			90	4	7	3	41			62	6	9	2	37			50	5	8	2	36			96	5	7	2	38		301	19	30	8	151				
3d Class.																																					
Hancock Barracks.	10	1671	168	19	27	3	47	10	1560	83	6	35	1	86	10	1630	62	11	9		56	10	1672	124	5	19	5	59	1633	437	41	85	9	248		1		4
West Point,	10	3631	783	15	20	6	177	10	3543	559	4	3		187	10	3898	555	20		1	198	10	3865	1176	37	11		126	3734	3073	76	34	7	688				4
Fort Snelling,	10	1547	210	3	16	4	108	10	1515	314	2	6		127	10	1424	182	3	13		73	10	1499	214	1	17		84	1496	920	9	52	4	392				1
" Winnebago,	10	1535	102	5	6	1	33	10	1505	74	4	16	2	35	10	1527	80	1	2	6	15	10	1571	132	1	5	1	26	1534	448	11	29	10	109			1	3
" Crawford,	9	1660	288	6	19	3	42	10	1749	255	6	9	2	62	10	1885	146	2	17	5	58	10	1878	359	14	30	3	47	1793	1048	28	75	13	209				6
" Armstrong,	8	666	96	3	6		33	7	534	46	3	7	1	33	6	555	19		3	1	24	7	608	48	3	7	1	23	591	209	9	23	3	113				
" Leavenworth,	10	2127	537	15	23	11	134	8	1492	92	13	14	4	76	8	1546	33	7	4		37	9	2126	180	2	16	4	88	1823	842	37	57	19	335		2		4
Total,		12837	2244	66	117	28	574		11898	1423	38	90	10	606		12465	1077	44	48	13	461		13219	2233	63	98	14	453	12604	977	211	355	65	2094		3	1	22
Ratio per 1000,			175	5	9	2	45			120	3	8	1	48			86	4	4	1	37			169	5	7	1	34		552	17	28	5	166				

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Abstract No. 2 of Appendix; showing, **I.** *The Mean Temperature for each Month, each Season, and the whole Year.*

Places of Observation.	Years of Observation	Mean Annual Temp.	Mean Temp. of the Seasons.				Mean Temperature of Each Month.											
			Winter.	Spring.	Summer	Autumn.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Lat. 29° 50′, Long. 81° 27′. St. Augustine, - -	1825–8–30	72.24	62.83	70.55	82.05	73.56	62.15	64.97	66.53	68.68	76.44	81.12	82.36	82.68	79.56	73.61	67.47	61.38
Lat. 29° 12, Long. 82° 12′. Fort King, - - -	1833–4	72.66	61.78	72.56	84.20	72.08	60.81	65.28	65.56	73.31	78.81	84.94	84.03	83.63	81.52	72.81	61.98	59.25
Lat. 27° 57′, Long. 82° 35′. Fort Brooke, Tampa Bay,	1825–8–30	73.19	65.02	71.71	81.04	74.59	63.75	66.56	66.48	71.27	77.39	80.90	81.43	80.79	79.01	75.04	69.71	64.76
Lat. 24° 33′, Long. 81° 52′. Key West, - - -	1831–2	76.09	70.05	76.04	81.39	76.96	67.93	72.15	73.71	75.69	79.22	80.51	82.59	81.06	80.89	76.76	73.23	70.08

II. *The Difference between the Mean Temperature of each Month and Season.*

Places of Observation.	Mean Annual Temp.	Difference of Mean Temp. of Summer and Winter.	Difference of Mean Temp. of Warmest and Coldest Month.	Mean Difference of Successive Mo's.	Difference of the Successive Seasons.				Difference of the Successive Months.											
					Of Winter and Spring.	Of Spring and Summer.	Of Summer and Autumn.	Of Autumn and Winter.	Of Jan. and Feb.	Of Feb. and Mar.	Of Mar. and April	Of April and May.	Of May and June.	Of June and July.	Of July and Aug.	Of Aug. and Sept.	Of Sept. and Oct.	Of Oct. and Nov.	Of Nov. and Dec.	Of Dec. and Jan.
St. Augustine, - -	72.24	19.22	21.30	3.55	7.72	11.50	8.49	11.41	2.82	1.56	2.15	7.76	4.68	1.24	0.32	3.12	5.95	6.14	6.09	0.77
Fort King, - - -	72.66	22.42	25.69	4.28	10.78	11.64	12.12	10.30	4.47	0.28	7.75	5.50	6.13	0.91	0.40	2.11	8.71	10.83	2.73	1.56
Fort Brooke, - -	73.19	16.02	17.68	2.97	6.69	9.33	6.45	9.57	2.81	0.08	4.79	6.12	3.61	0.53	0.64	1.78	3.97	5.33	4.95	1.01
Key West, - - -	76.09	11.34	14.66	2.44	5.39	5 35	4.43	6.91	4.22	1.56	1.98	3.53	1.29	2.08	1.53	0.17	4.13	3.53	3.15	2.15

III. *The Mean Annual and Monthly Ranges of Temperature.*

Places of Observation.	Mean Annual Temp.	Annual Range.			Mean of the Monthly ranges	Jan.			Feb.			Mar.			April.			May.			June.			July.			Aug.			Sept.			Oct.			Nov.			Dec.		
		Range.	Maximum.	Minimum.		Range.	Maximum.	Minimum.	Range.	Max.	Min.	Range	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.
St. Augustine, - -	72.24	59	93	34	23	35	78	43	30	79	49	25	78	53	31	80	49	20	88	68	17	90	73	14	92	78	12	91	79	14	86	72	22	82	60	22	78	56	36	77	41
Fort King, - -	72.66	78	105	27	40	50	83	33	41	84	43	48	87	39	39	93	54	33	97	64	32	105	73	29	102	73	32	104	72	29	99	70	50	91	41	52	82	30	43	79	36
Fort Brooke, - -	73.19	56	93	37	29	34	77	43	35	81	46	35	84	49	35	87	52	23	90	67	24	91	67	19	92	73	19	92	73	23	91	68	32	88	56	32	84	52	40	80	40
Key West, - -	76.09	37	89	52	16	23	80	57	20	81	61	20	85	65	1	84	65	15	87	72	13	86	73	11	88	77	14	88	74	11	87	76	15	85	70	15	80	65	16	78	62

ART. II.—*Contributions to Legal Medicine.* By T. R. BECK, M. D., Professor of Medical Jurisprudence, Albany, New York.

CASE I. *Pretended Delivery.*—The following case was tried at the Ontario Circuit in the State of New York during the year (1840.) An action of ejectment, was brought by the widow of Oscar F. C., against two of his brothers, to recover a large and valuable farm. She claimed the farm in fee, as the heir at law, of a child, to which it was alleged, she gave birth after the death of her husband, but which died before the commencement of the suit, leaving her entitled, as heir, to the whole inheritance. The brothers claimed as heirs at law, admitting her right of dower, but denying her having given birth to a child.

It appeared by the testimony, that the plaintiff was married in July 1835, to O. F. C., he being then a ward in chancery, as an habitual drunkard; that he died on the 6th of October, 1837, of delirium tremens, leaving no issue born during his life.

In proof of the birth of a posthumous child, Dr. K., a practising physician at Geneva, Mrs. K., the mother of the plaintiff, at whose house she was, and a sister of the plaintiff all testified that on the afternoon of the 17th of July, 1838, she gave birth to a female infant; that they were present and assisted at the birth; that the child lived about three weeks and then died and was interred in the burying ground of the C. family, on which occasion there was a large funeral attendance, a funeral sermon preached, and the plaintiff's family went into mourning. Mrs. L. a respectable female and near neighbour of that family also testified, that she was present, not at the very moment of the birth, but immediately thereafter; that she saw all the appearances usually observable on such occasions—received the new born infant from the arms of the physician, as he performed the last act of separation from the mother—that she washed and dressed it in the apparel that had been prepared, and placed it in the plaintiff's arms, she being by that time restored to her bed. Many witnesses testified that she nursed this child as long as its health continued, and when that began to fail, the doctor procured a puppy to supply its place at the breast. Much proof was also adduced of the appearance of the widow for months previous to her confinement.

For the defendants, it was stated, that the above testimony was in the main false and that the child was a supposititious one. In support of this, the following testimony was adduced.

A middle aged man was called, who testified that in 1838, and for several years previous, he was the captain of a canal boat, and that a young unmarried woman, who was the maid on board his boat, was discovered in the spring of 1838, to be pregnant, and as he had reason to believe, by himself; that having a family, and being desirous of concealing the transaction and at the same time of providing for her comfort, he applied to a friend in Geneva, to procure a suitable place for her during her confinement. This friend recommended him to Dr. K., and he accordingly saw him. He was asked

by Dr. K. when the child would probably be born, and upon being informed, that the birth might be expected in the early part of July—he, the witness, was directed to call again on the following day. He did so, and the doctor then asked him, if he and the girl would be willing to part with the child after its birth, provided it could be well brought up and inherit a large property; that the doctor knew of a widow, whose husband had recently died and if she could have a child within nine months after his death, it would get a large estate. The name and residence of the widow were withheld. The witness partially consenting to the proposition, was requested to bring the girl to the doctor's office, which he did, and after some private conversation between her and the doctor, he left her there, under his assurance that she would be well provided for. Not being entirely satisfied that all was right, he called on the doctor some days afterwards and insisted upon being informed where the girl was, that he could obtain no information on the subject, and thereupon addressed a letter to her, inclosing some money, which was placed in the doctor's hands; that being still dissatisfied, he again called on the doctor, a few days afterwards and threatened to expose him unless he informed him where the girl was; the doctor left his office, and after a short absence, returned and directed him to a neigbouring house, which he understood to be the residence of old Mrs. K.—where he had an interview with the girl, and that he did not see her again until the latter part of July, 1838. He left her with the doctor about the middle of May. The witness also testified, that some time after, the girl was delivered of a child, and in the latter part of July, or the first of August in the same year, he had a conversation with the doctor, who stated to him that the child lived eight days, and that after its death, he buried it in the burying ground, about midnight.

The female referred to by the last witness, was next cal'ed and testified to her going to the office of Dr. K. That he told her in a private conversation, that if she would part with it as soon as born, he could make it heir to a large property, and have it brought up without any care on her part. She neither assented to, nor rejected this proposition. The doctor took her to the house of Mrs. K. where she remained until the 17th of July, when she gave birth to a child, which was immediately taken out of the room where she was, by a sister of the plaintiff, and that she had not seen it since; that the doctor, and mother, and sister of the plaintiff were present at the birth. They had all told her that the child died immediately after it was born, and the doctor said he had buried it. She remained at Mrs. K.'s nine days after the birth of the child, when she was removed to a place, a few miles distant, provided for her by Mrs. K. While at Mrs. K.'s, she was kept in a room up stairs, without being permitted to go into the street, or look out of the window, or see any person except the family. She knew that the child was born alive, for it cried twice before it was taken out of the room, and she heard a child cry every day down stairs, after that, as long as she remained, but had not heard any thing of that kind previously. She was positive that her child was *born during the afternoon of the 17th of July.*

Several witnesses also deposed that they had not observed any enlargement in the plaintiff until some time in the month of May.

To rebut this testimony, Dr. K. stated, that he had received the last witness, at the request of the captain, and obtained board for her at Mrs. K.'s because it was convenient to attend her at the same place where he was attending the plaintiff—that she had a male child there, and he was present

at its birth—but that it was born on the 19th of July, two days after the plaintiff was put to bed;—that the child died as soon as it was born, and he took it to his office and put it into a jar of spirits to preserve it, but the spirits not being strong enough, it "spoiled." The mother and sister of the plaintiff again corroborated the statement of the Dr. in all its particulars.

After a full and able argument by counsel, the case was committed to the jury, who in a few minutes returned a verdict in favour of the defendants.

The above narrative is taken from a newspaper report, but I have reason to believe that it is substantially correct. I have been informed by one of the counsel for the defendants, that a strong point against the physician was his inability to account for the remains of *two* children. Had he been able to designate any place where the second was to be found, search would instantly have been made for it.

Conceding that the verdict was just, it is easy to explain how Mrs. L. was called exactly at the moment when her testimony would prove available.

It is not among the least curious incidents in this case, that the mother of the child was subsequently well married, and that her husband was unaware of her previous condition, until the subpœna was served on her. On being informed of it, he consented and indeed insisted that she should obey the process of law and disclose the whole truth. The plaintiff and her friends probably came into court, with the idea that the circumstances relative to the girl were totally unknown to all, except themselves and the parties immediately concerned, and these last, they doubtless supposed, would not be desirous of exposing themselves. Such was, indeed, the fact, and the subpœnas were actually issued, without being aware of how much importance, the testimony of the captain and the female might prove.

Case II. *Poisoning by Arsenic. Sudden Death.*—A melancholy instance of this description recently occurred in my own family. Some of the facts are deserving of record, and as the case will best be understood by a narrative of the attendant circumstances, I give these in detail:—

Harriet F. came on the 10th of March, 1840, as a chambermaid, with good recommendations. She was about 24 years old, a native of England, and a resident of this state some four or five years. Her conduct was unexceptionable, being but little given to visiting, and receiving very few visitors. About the middle of June, however, my attention was called to her appearance, and it immediately struck me as equivocal. I caused a private communication to be made to the female who had recommended her, of my suspicions of her pregnancy, but the idea was scouted as altogether impossible. Still, not feeling satisfied, and thinking it best to err on the safe side, I had her notified that I should have no further occasion for her services after the expiration of the month, viz., the 10th of July. She received this without any unpleasant feeling, saying that she had herself intended going into the country very shortly.

Nothing occurred until the 8th of July, two days previous to the above term, when about half past eight A. M., a female (who I afterwards learned had had a private interview with the maid in the kitchen,) desired to see me. She was extremely agitated—stated that she was a married woman—that

H. was pregnant by her husband, and that these parties were concerting a plan to elope together into the country—and finally requested me to detain the maid's clothes in order to prevent this. After some questioning, I declined doing this, saying, that if all this was so, I wished H. to leave as soon as possible, and certainly had no right to detain any of her property. With this she left me, threatening to send an express to the father of H. who resided some thirty miles in the country, and inform him of the above.

About half past ten, Harriet came up stairs, and stated to one of the family, that after the above scene, she did not think it right to remain, and asked whether there would be any objection to dismissing her. A ready consent was given and her wages handed to her. Immediately after this, she put on her hat and went out of the gate. The cook stated before the coroner's jury, that she could not have been absent more than ten minutes, and it is now ascertained that during that time she went to a druggist's near by, and purchased an *ounce* of arsenic. On her return, she went up the garden, and continued so long, that, in consequence of a friend calling to see her, she was sent for. This friend who had just become acquainted with the charges made by Mrs. D. urged her to leave, and that, if any thing was wrong, she would procure lodgings. She consented, and went into the bedroom for the purpose of packing up, and closed the door after her.

My family supposed that she had left, when at half past one o'clock, the cook sent up word, that Harriet was still down stairs quite ill, and that she had been vomiting and purging. I was shortly after sent for, and found her lying on the bed, apparently very drowsy, and unable to speak, except in unconnected sentences. On being asked what was the matter, she replied, "I don't know what you say," and repeated once or twice, "Oh! I shall die." My first impression, I confess was, that the agitation of the morning was about producing abortion, but on continued examination, I inclined to the suspicion of poison. The eyes were extremely bloodshot—she complained of scarcely any pain, and appeared rapidly sinking—although sensible when addressed. I requested the attendance of my friend, Dr. Wendell, but before he arrived, in answer to the earnest adjuration of one of the females with her, as to what she had been taking, she answered with difficulty "*arsenic.*"

For a case so decidedly moribund, but little could be done. It was too late to prepare the hydrated oxide of iron, and we therefore exhibited magnesia diffused in water, which she swallowed with great difficulty. An attempt to bleed her failed; the body was rubbed with stimulants, but she rapidly sunk and died without any convulsion or apparent pain, precisely at half past two o'clock.

No vestige of the purchased arsenic has been discovered up to this time, and the probability therefore certainly is, that she swallowed nearly the whole, and that in the dry state.

An examination of the body was hardly practicable, in consequence both of the state of my family and the heat of the season. The coroner's jury were, however, fully satisfied of the existence of pregnancy, and this was probably advanced about six months.

The points of interest in this case, appear to me to be the following. 1st. We have the effects of arsenic in large quantity, uncontrolled by the interposition of any remedies; and the symptoms, so far as they can be ascertained, were copious vomiting and purging, which, however, ceased an hour, if not more, before death; but little pain; bloodshot eyes, the countenance

natural, and certainly not more suffused, than from the ordinary operation of an emetic; extreme faintness, without any thing that could exactly be called stupor; sinking, and the absence of convulsions. How strikingly these correspond with the appearances ordinarily observed in persons who have died within a few hours from the above cause, will be seen by referring to Christison on Poisons, third edition, p. 286, or Beck's Medical Jurisprudence, sixth edition, vol. ii, p. 371. 2d. The sudden fatality. It is not possible that more than four hours could have elapsed from the time of taking the poison to her dissolution, since she did not leave the house until half past ten. If she swallowed it while in the garden, (and this is the most probable,) it was somewhat within that time; if in the bed room, it could scarcely have exceeded three hours. I subjoin, for comparison, the cases collected by Christison and myself.

1. Dr. Smith, New York Medical and Philosophical Journal, vol. iii, p. 6. *Eighteen hours.* Dr. Christison says *eight*, but on referring to the original, the other will be found to be correct.
2. Metzger. Christison, p. 287. *A few hours.*
3. Dr. Christison, Edinburgh Medico-Chirurgical Transactions, vol. ii, p. 298. *Five hours.*
4. London Medical Physical Journal, vol. xxxiv. *Five hours.*
5. Dr. Gerard, Revue Médicale. *Five hours and upwards.*
6. Orfila, Archives Générales. *Nine hours.*
7. Mr. Holland, London Medical Gazette, vol. xv. *Eight hours.*
8. Chaussier, Orfila's Toxicology. *A few hours.*
9. Mr. Macaulay, Christison, p. 289. *Two hours.*
10. Mr. Wright, Lancet, vol. xvi. *Four hours.*
11. Morgagni. *Twelve hours.*
12. Laborde, Journal de Médecine. *Nine hours.*
13. Dr. Gould, Boston Medical Magazine. *Seventeen hours.*
14. Mr. Coates, London Medical Gazette, vol. xx. *Four hours.*
15. Mr. Joseph Thompson, Lancet, No. 792. *Six hours.*
16. Mr. Pettigrew. See his life in the Medical Portrait Gallery. *Seven hours.*

In Mr. Wright's case, an ounce of arsenic was taken, in Mr. Coates' two ounces, and in Mr. Macaulay's Dr. Christison says, "the individual died with narcotic symptoms only, within two hours, after taking nearly a quarter of a pound of arsenic."

Case III. *Protracted Gestation.*—I am indebted for the particulars of the following case, and the accompanying comments, to my friend *James R. Manley*, M. D., of New York, the physician in attendance.

"Mr. and Mrs. G—— are Polish exiles of excellent education and morals, and highly esteemed among their acquaintances.

"Some time in February, 1840, Dr. Manley was requested to take charge

of Mrs. G., as she expected to be confined about the 10th or 15th of April ensuing. She had previously been his patient having treated her for hæmoptysis. On the 7th of April, however, he was sent for to prescribe for another and violent attack of the same complaint. She was bled twice largely, kept on a low diet, absence from all stimuli, even light, &c., for about three weeks, in the hope that her daily expected confinement would be her chief security against the ordinary consequence of her disease, viz. consumption. The treatment was successful, the cough and hæmorrhage ceased, but the parturient effort was deferred until the 29th of May.

"As you may well suppose, this created much anxiety in the minds of her friends, whether viewed as a moral or physical question, and I became unusually interested in the result. On close inquiry, I satisfied myself of the following facts. 1. Her husband had left her on business on the 13th of July, 1839. 2. He did not return until the last of November. 3. During the first three months of pregnancy, she was twice unwell or menstruated, but as she was 39 years old, and had borne six children, and the amount was trifling, she, in place of deeming herself pregnant, thought it furnished evidence of the approaching cessation of the function, and particularly as the ordinary accompaniments of previous pregnancies, viz. sick stomach, toothache, &c., were altogether wanting; but 4. On the 30th of November, she felt quickening, which, allowing four and a half months for the mean time of the appearance of that sign, made her reckoning for the 15th of April correct. 5. On the nights of the 12th and 13th of December, she was attacked with hæmoptysis, for which I treated her by bloodletting and the negation of stimulants and nutrition, and was successful. The occasional hæmorrhage continued however for nearly three weeks. 6. On the 7th of April, as before observed, she was again seized and treated successfully. This was a violent attack, and the treatment was carried to a greater extent than before.

"About the 16th of April, having occasion to leave home, I put the patient under the care of my friend Dr. Duvall, in whom I could place the utmost confidence, believing that she would be confined every hour, as she complained of pains, which I presumed were premonitory, though not parturient. When I returned after an absence of three days, I found things as I had left them. She complained of much uneasiness *in perinæo*, and told me that Dr. D. had ordered an enema, which could not be administered from inability to insert the pipe of the instrument; said that she was sitting upon the child—that if she got up and again sat down, she felt unpleasant, as if something was pressed upwards. About the first of May, so much anxiety was manifested by her friends, that without my knowledge, Dr. S. was requested to visit her, and after examining into her condition, was sufficiently satisfied to pronounce that she was not pregnant *with a child*, although she might have hydatids or a mole *in utero*. As soon as I was informed of this opinion, I lost no time in satisfying myself concerning

her condition. I made a thorough examination by auscultation and the sudden application of the cold hand to the abdomen. The result was such as could not deceive, and I pronounced her pregnant and near delivery, which might take place within two hours, as the head of the child rested, I may almost say, on the perinæum, and the os tincæ was dilated larger than a dollar. The head was so wedged, that every attempt to pass by the side of it, produced excessive pain, although the patient complained of nothing but pain in the pelvic region. This particular examination was made about the 6th or 8th of May. She continued in this state, enduring more or less pain every day, till the 29th, when she was happily delivered of a son weighing 9¾ pounds.

"There was nothing peculiar in her parturition, except that it was a forehead presentation, and the cord was so convoluted, and entangled the child so much, as to leave but seven or eight inches of its length, being twice around the neck and once around the abdomen. When the waters burst, they came away with a great deal of meconium—calculated to lead to the impression, that there were twins in utero, and that the membranes of each had ruptured, since it is, I apprehend, a very rare occurrence, to meet with the alvine fœtal evacuations in cases of head presentations. The posterior fontanelle was obliterated, and the anterior was very small, not exceeding the size of a five cent piece. The child was remarkably strong, and the papillæ of what is denominated red gum, were in many places marked by yellow points, as is usual, when children are a week or more old. The labour was short, but excessively painful, by reason of the presentation, and the placenta was detached at the time of birth.

"The above recited case presents an extraordinary exception to the general term of uterogestation, and if exceptions can impair the obligation of a general rule, this is one of such a peculiar character, as cannot fail to have its influence in modifying the opinions of the profession; as facts of this character are by far too serious in their consequences to be permitted to pass unnoticed. The laws respecting the legitimacy of offspring have by common consent settled upon a term of gestation considerably within the limit which this case presents, and this adds materially to its importance. Perhaps no facts can be better authenticated than those above stated. The character of the female is above suspicion; the simplicity of the account which she gave long before such a result could have been anticipated; her anxiety about the event, the opinion of a distinguished surgeon and accoucheur notwithstanding; all prove the sincerity of her expressed convictions, and render the detail peculiarly interesting.

"The reflections suggested by this case, naturally arrange themselves under two distinct divisions, which may be stated interrogatively thus:—First. Can diseases, or the treatment necessary for their cure, have an influence in protracting the term of gestation? Secondly. May not protracted gestation be often confounded with protracted parturition, and be the cause of many

of those anomalies which the subject of gestation presents? We know that diseases have an influence in shortening this period, as we are frequently called to prescribe remedies with the single view of preventing abortions and miscarriages, and we treat them successfully even after the parturient pain has continued for a considerable time, and that, if need be, we persist in our remedial measures so long as the membranes continue entire, without reference to the condition of the uterus itself; and if medical treatment can arrest uterine action, after it has commenced in premature labour, may not the same treatment, used for other reasons, produce such a condition of the female system, as will delay the advent of a natural labour, after the contents of the uterus have attained their maturity, or after the period has arrived when the parturient effort would naturally be made. The usual term of gestation is 280 days, but children are frequently born, and live, or to use a significant phrase, they are *viable* if expelled at the end of thirty weeks, and thirty-five or thirty-six weeks is a period of gestation not unusual in cases of first pregnancies. Why the over-running of the usual term should be considered so extraordinary, when falling short of it is so common, more especially when the evidences of the infant's detention, are as apparent to the senses, as the evidences of premature birth, is only to be explained on the ground that law has settled the one on principles of policy, and left the other open, as it requires none of those legal safeguards which are presumed to be essential to the protection of hereditary property; and it is easier to conform our opinions to some settled rule, than be at pains to examine individual cases by data, which may or may not be received, where private interest or public prejudice, combine to admit or reject their application. The laws respecting legitimacy of offspring, which limit gestation to 300 days, may be, and I doubt not are, wholesome ones in their operation: some bounds must be set; and the nearer they are fixed to the duration of the ordinary term, the greater is the security of public morals, since their extension would offer facilities to adulterous intercourse, which would be incompatible with the public welfare; nevertheless, it is as much an obligation of duty, as it is a dictate of humanity that the evidences upon which these anomalies rest should be carefully examined, that the stain of bastardy on the one hand, and the loss of reputation on the other may not unreasonably attach to the child or mother. The facts above stated in relation to Mrs. G——, are as true as demonstration could make them, and by them, it appears that she carried her child 10 months and 13 days, but they admit of easy explanation, if we allow the treatment which was rendered necessary during her two attacks of hæmoptysis to have had any agency in suspending the process of fœtal growth and uterine evolution; for after all is said, it is not certain that any other cause than the maturity of the fœtus determines the natural period of gestation. The appearance of the child at birth; its size and weight: the obliteration of the posterior fontanelle, and the very small aperture of the anterior one; the appearance at birth of that peculiar eruption

denominated the red gum, (*strophulus intertinctus*,) and the matured character of it, for the vesicles were filled with an opaque yellow serum, all render it probable that the infant was detained in utero beyond the usual time.

"But it may be objected, that the explanation proves too much, since, on the assumption that the debilitating treatment of the pregnant woman prevented the child from attaining maturity in the ordinary period; it ought not to have presented any extraordinary appearance at the time of birth, and the exception is well taken, if the case was permitted to stand without additional evidence; that additional evidence may perhaps be found in the answer to the second interrogatory.

"I am not aware that any distinction has been attempted to be made between delayed, deferred, or protracted *parturition* and protracted *gestation*, neither does any appear necessary except for medico-legal precision, and it must be confessed that it is of the utmost consequence. Protracted parturition is a common occurrence, and from the nature of the case can scarcely pass unobserved; it is far otherwise, however, in protracted gestation. The commencement of the one is well marked, whereas the other, under circumstances of married life, and by reason of the feeble and indistinct manner in which conception manifests itself, is only known by symptoms which have place after the lapse of many days. It is a law of *being* as constant as any other law which controls physical action, that labour should be a painful process, and the reasons for this are too obvious to require to be stated; nevertheless cases do not unfrequently occur, where the law appears to be suspended. Women have been known to be delivered of their children without experiencing any of the pains of the first stage of labour: they have been delivered, without any painful premonition, in the street, in carriages while proceeding from one place to another, in the porches of churches, nay, while sitting with their families at the dinner table, (a case of which occurred very lately in this city,) and every practitioner of midwifery with even limited experience must have witnessed cases in which delivery was accomplished by a single parturient effort. Now in these cases it is reasonable to suppose that the first stage of labour was attended by so little suffering, as to have escaped observation, and although the relaxation of the internal parts, the dilatation of the *os uteri*, and the contraction of its fundus and body are the work of time, it was accomplished even without the knowledge of the patient or the accoucheur. It has frequently happened in my own experience that a labour has commenced and progressed painfully till the pressure of the child was felt *in perineo*, when the pain has entirely subsided, and the patient experienced no uneasiness, except from pressure, for two, three, or four days, and in two recent instances, this condition continued a whole week, and when pain did recur, the same effort which ruptured the membranes, expelled the child. There is confessedly much variety in the character of labours, and scarcely two are alike among twenty

consecutive cases. In the present instance I instituted no special examination, till I was informed that a surgeon had visited my patient and pronounced that she was not pregnant with a child.—It was early in May, that I made this examination and I found the *os uteri* much dilated and the head of the child resting *in perineo:* no labour pains had been felt, nor did pains of any kind which could be mistaken for labour occur till the morning of the 29th of May, about three weeks afterwards. The labour, however, was a painful one and continued five or six hours, which I attributed to the position in which the child presented. If the presentation had been of the vertex, I doubt not that she would have been confined in a short time and with little suffering: and I cannot doubt, that but for the same cause, she would have been delivered three weeks before. In this event, neither her labour, nor her gestation would have had any extraordinary features, but would have passed, either entirely unnoticed, or would have attracted very little attention." Yours sincerely,

JAMES R. MANLEY.

Dr. Theo. R. Beck.
New York, *September* 18*th*, 1840.

Art. III.—*Remarks upon Dyspepsia as connected with the Mind.* By Austin Flint, M.D., of Buffalo, N. Y.

Having perused, in two of the late numbers of the American Journal of the Medical Sciences, the articles by Professor Chapman, with the attention and interest which the eminence of the author, and their intrinsic value claim, I may seem to expose myself to the charge of presumption in presenting the following remarks. It is, therefore, proper for me to state, that having for several years had occasion to study the symptoms of that form of gastric derangement, known under the term *dyspepsia*, by means of *personal sensations*, I have, in consequence, been led to examine with peculiar interest other cases of an analogous character. This has led me to entertain some views respecting this affection which I do not recollect ever to have seen fully expressed, and which I have thought may possess some interest and importance. I offer this as an apology for a communication succeeding the publication of the articles above alluded to.

The characters of this disease derived from its influence upon the mind, have, of late years, received considerable attention. This branch of the subject, however, offers still ample scope for investigation. It is, in truth, a very important subject, considered with reference, not only to its pathological character, but also its moral, intellectual, and social relations.

My remarks, limited entirely to this view, will relate, 1st. To the character of some of the more prominent symptoms of the disease.

2d. To the circumstances derived from the mind which seem to originate and prolong it.

3d. To some of the therapeutic indications derived from the considerations presented under the first two heads.

1. The mental aberrations connected with this disease are exceedingly numerous and diversified. This, probably, is not so much owing to the differences which are, strictly speaking, pathological, as to the modifications produced by different habits, and associations, the influence of education and particular pursuits, and the peculiarities of mental constitution.

A state of unhappiness, varying in degree from a slight gloom to intense wretchedness, is common to every variety. But, from the various influences of the causes just enumerated, this will in particular instances develope itself in different forms. In its lighter shades, this condition is indicated by "depression of spirits," a disposition to dwell upon gloomy topics, to view every thing upon its darkest side, and a general feeling of discontent and dissatisfaction.

When more fully developed and confirmed, the mental condition is so strikingly portrayed by the eloquent author of "*self education*" (Degenando), that I cannot forbear quoting it in this connection.

"There is another and far different trial of strength of character, which threatens it in the very point where it should find support; it sometimes happens, that the government of our own faculties is partially withdrawn from us, without our being able to resume it. This is observed, for example, in certain nervous affections and maladies, which without producing real alienation of mind, yet so sensibly alter the play of our organs, that the soul which employs and depends upon them, inevitably feels an inward and peculiar malady. Objects change their colour and form; vague, involuntary and unsought terrors take possession of us, leaving us no power to master them. In vain we call to our aid the recollections of the past, and the prospects of the future: the first only heart-rending regrets, the latter only mournful images. We wish to take refuge in moral meditations, but the sanctuary is closed; we seek the objects of affection to be reinstated by their presence, but they seem to be covered with a funeral veil, and, in spite of itself, the soul doubts of their affection and its own. This is a sort of delirium, not entire, but more painful to him who feels it than total alienation of mind: for he is conscious that his faculties are in disorder; he sees his own difficulty, yet, is impotent to restore the harmony.

"The affliction caused by this inward spectacle redoubles the horror of his situation. What a singular trial of virtue! who has described such a state? who has pointed out the regimen that can bear us through it unharmed? It is doubtless extraordinary and consequently little known: it cannot be imagined by those who never felt it."

The intensest grade of this disorder, cannot, perhaps, be more forcibly expressed, than by the language which the unfortunate poet Cowper employs in giving a transcript of his own sensations. "I awake in the morning, (says he,) like a toad out of *Acheron*, covered with the *mud* and *ooze* of *melancholy*."

One of the most common aberrations (which is alluded to in the former quotation) consists of a certain undefined sense of fear and apprehension. There seems to exist a state of mind somewhat resembling that of a child whose imagination has been excited by stories of supernatural agencies and adventures; and this may occur, not in those whose mental powers are feeble or uncultivated, but in individuals of an opposite character. A clergyman of vigorous and disciplined intellect, in connection with derangement of the digestive organs, declared, that he experienced an extreme dread of being alone, and of sleeping in a lonely apartment; at the same time that the strength of his intellect was unimpaired as evinced by his discourses and conversation.

A medical friend recently informed me that a similar condition is uniformly associated with paroxysms of gastric derangement to which he has long been subject. At such times, a sudden professional call produces the feelings and physical symptoms of terror. He experiences apprehension in meeting individuals in the street as if they were disposed to attack him. At the same time, he is sufficiently convinced of the absurdity of such a condition, nor does he feel sensible of any diminution of capacity to exercise the duties of his profession. Nevertheless, he cannot divest himself of these feelings.

I mention these two instances as illustrations of a state of mind which I have known to exist in numerous cases, varying in degree and in some of its features, but essentially analogous in all.

Another species is the persuasion of the existence of some imaginary disease. The kind of disease will depend upon the patients' knowledge of the nosology. Those who have had occasion to observe the progress of certain diseases, will, probably, fix upon one or more of these. If a selection is made, it will be that of the gravest character. *Phthisis* is often imagined, and the imagination is as assiduous in contriving evidences with which to convince the reason of its existence, as it is to produce an opposite conviction when the disease is actually present. Another disease often fixed upon is *organic affection of the heart*, and this idea receives constant confirmation from the sympathetic irregularities of this organ, which generally attend the disease under consideration.

Dyspeptics are also apt to imagine some disease of the *generative organs*, and it is truly surprising, as it regards this and other diseases, to observe, how the slightest circumstances will be converted into the most conclusive evidences, and how easily and deeply their fears are excited.

A gentleman who had happened to know of the existence of the prostate

gland and of the difficulties incident to its enlargement, suffered slightly from hæmorrhoids in connection with derangement of the digestive organs; but he could not be persuaded that the prostate gland was not enlarged. Afterwards the same gentleman conceived the idea that one testicle was schirrous and actually solicited its removal. It was found exceedingly difficult to remove this impression.

Whatever be the character or location of the imagined disease, the aberration is characterised by the absence of that *hope* which usually attends the actual existence of the fancied diseases. A dyspeptic under this infatuation, rarely hopes. He not only believes the existence of the disease, but, that he is doomed to become its victim.

Another mode of the influence exerted on the mind is a peculiar inaptitude to exertion, corporeal and intellectual. Volition is a painful effort; and to concentrate the mind upon any point is a work of great difficulty. Individuals thus unhappily affected, feel unfitted for situations which require vigour of the reasoning faculties, or the combined energy of purpose and action. They shrink from that discipline and exercise which the powers of body and mind require. They manifest a deficiency of interest in all those events to which most persons are alive, and are insensible to the occasions of enthusiasm and fervent emotion.

The intimacy of connection between the mind and stomach, is strikingly manifested by the temporary diminution of intellectual and physical energy, which sometimes occurs in dyspeptic patients during a laboured digestion. It seems to be analogous to the prostration which exists in fever. The powers are not absolutely lost, but, as it were, borne down by a weight which the patient has not resolution sufficient to throw off. An unusual motive to exertion, or a cause of excitement, will sometimes cause it to disappear, and it spontaneously passes off after digestion is accomplished.

Such are some of the more prominent mental features of this disease. To describe them, so as to embrace the circumstances of particular cases, would require much more space than all my remarks will occupy. To do this in an essay upon the subject is rendered less important than it might otherwise be, by the fact, that, when the unfortunate dyspeptic receives from his medical adviser any encouragement, he is far from being disposed to conceal his sensations. To amplify upon them, is, indeed, one of the characteristic circumstances attending the disease.

A consideration of much practical importance, arises from the absence, in many cases, of symptoms, indicating in a very distinct and obvious manner, the existence of physical disorder in connection with these aberrations of mind. They are often so slight as to deceive the patient, his friends, and the physician. Especially is this liable to happen at the commencement of the disease. In a large proportion of cases, the effects exerted upon the mind are the first symptoms which declare themselves with sufficient prominence to attract attention. A change in the disposition, feelings, and habits

of the individual, is remarked by his friends; and, if he be accustomed to self-examination, he becomes conscious of it himself: but this is frequently attributed either to a natural revolution of character, to extrinsic circumstances, or it more often is deemed unaccountable.

The morbid affection of mind is not generally sudden. Persons are gradually and imperceptibly betrayed into the disease. When the discovery is made that this is the difficulty laboured under, the patient is generally satisfied that he has been a dyspeptic for some time without suspecting it; and, perhaps, he cannot date the period of its commencement.

Even after the disease is confirmed, there seems to be often a want of correspondence between the degree to which the mind suffers and the disturbance of corporeal functions. The latter may have so little prominence that the patient may not regard his case as one admitting of medical aid; and the physician, unless conversant with the disease as developing itself by its influences upon the mind, may regard it as without his province.

This is the more important, because, there is reason to believe, that an early employment of judicious means would prevent the establishment of a disorder, which, when confirmed, is, certainly, one of the most difficult to remove.

Before passing to the second head, I would make a few remarks upon the importance which the symptoms, thus briefly described, derive from their relations to the moral, intellectual and social character of the individual. If it be true, that, to the extent already supposed, the obstructions and embarrassments of the moral and intellectual powers, ordinarily attributed to the perverseness of human nature, are dependent upon certain morbid influences derived from the body, it is a matter of great importance: but its importance is vastly increased, when we follow out these influences to their extreme results. Is it not probable that the same influences which produce that dejection and melancholy which have been mentioned as common to all cases of dyspepsia, when exerted under certain circumstances or in peculiar constitutions, lead to that painful sense of the weariness of life which impels to suicide, or that disposition to ponder on the miseries and vices of mankind which is cherished by the misanthrope? Do they not sometimes induce a state of recklessness which may eventuate in the sacrifice of character and self-respect, at the shrine of sensuality? In a still greater degree of intensity do they not produce confirmed insanity?

In like manner, that susceptibility to vague apprehensions and superstitious fears which has been described, may, perhaps, in some instances, prepare the way for the extravagances of fanaticism and religious frenzy. A disposition to believe in the presence of imaginary diseases, may easily result in confirmed hypochondriasis.

And in that inaptitude to exertion, mental and physical, which is peculiar to this disease, exist the elements of these qualities, which stamp the character as indolent, inefficient, weak, cold and selfish! If there are reasona-

ble grounds for believing that these relations actually exist, it must appear that the subject has not received that degree of attention which it merits. It cannot be doubted that this branch of philanthropic effort is too generally neglected by physicians.

2. I proceed in the second place to consider some of the circumstances connected with the mind which appear to have important influences in originating and prolonging the disease.

The relations of the digestive organs and mental powers are such, that they exercise a reciprocal influence upon each other. Hence, it has not escaped observation, that the causes of dyspepsia may spring, primarily, from the mind itself. It may be deemed a matter of doubt, whether the deviations from a healthful condition of the mind, may not bear to the gastric derangement, the relation of *cause* instead of *effect*. A close analysis will, however, in all cases, show, that the former arise consecutively; nor do we find these peculiar aberrations present without this connection, which would be the case were they produced by moral agencies uncombined with physical. We are then forced to conclude that they are diagnostic of a certain morbid condition of body. The condition of such, in this disease, is, indeed, so unlike any, which is the result of causes affecting directly the mind itself, that a practical observer cannot fail to distinguish it without any examination of organs and their functions. Yet there is reason to believe, that we are to look into the mind for the circumstances which predispose to and in many cases, are chiefly concerned in, producing the disease, and which, in all cases, assist in its continuance. Some of these, as it seems to me, have been generally overlooked. A dyspeptic presents himself to a physician and states his sufferings. The physician inquires concerning his habits, mode of life, &c. He ascertains that he has indulged his appetite for food and drink without much discrimination, and at all periods, has neglected to take exercise, &c. He exclaims at once, "it is not surprising that you have dyspepsia," and he recommends him to reform his habits. If the patient follows this advice perhaps he recovers his previous health without difficulty. Shall we then say that dyspepsia generally arises from dietetic errors? This, probably, is the common doctrine; but I am disposed to doubt its general applicability. How many are there who pursue such a course for a great length of time, perhaps during the whole period of life, without becoming dyspeptic, when, as far as we can judge, there is no reason to suppose their immunity is owing to a better constitution or stronger power of endurance!

On the other hand, how many with the utmost care and prudence become and continue dyspeptics!

It is not to be inferred that irregularities and intemperance are not common causes of this disease. In the poorer classes, it may, perhaps, generally be attributed to these, conjoined with destitution, bad food, sedentary occupations, close or pernicious atmosphere, exposure, &c. In the will to the abuse of luxuries, with love of ease. But there is a class who do not want

the comforts of life, and who do not indulge in luxurious excesses, and observation shows, that in this class dyspepsia is not only common, but peculiarly obstinate and persistent.

This is an important fact in relation to the disease. A poor person, if he be better fed and clothed, his habits and the circumstances about him improved, is restored. A rich man, if he curtails his pleasures, uses more exercise, engages in healthful occupation, may, in general, expect the speedy return of good health and spirits. But the class between these extremes, who are already clothed and fed, who have no excesses to curtail, find, whatever course they may pursue, that to overcome their difficulties, requires not a small degree of care and perseverance.

Physical peculiarities of constitution may explain this in some cases, but, in general, it seems to me, that the explanation is to be derived from the connection of the disease with the mind.

This class, it is to be observed, as a general remark, embraces that portion of mankind, who are disposed more or less to occupations or pursuits which involve in a greater degree than in the other classes, the exercise of the intellect. Dyspepsia, it has been always observed, is more liable to seize upon those who are thus disposed, and two reasons have been assigned for this preference; viz: 1. The sedentary habits which these pursuits and occupations generally involve. 2. Reasoning from the well-known sympathy which exists between the brain and stomach, to excessive or disproportionate cerebral exercise.

There can not exist a doubt that the former play an important part in the production of, and predisposition to, the disease, but with regard to the latter, so far as I am able to judge from my own observations, it is rarely a cause of the disease, excepting in as far as it involves the former.

Among literary men we do not find that they are so liable to the disease who are in the habit of intense, prolonged, or frequently repeated intellectual exertions, although accompanied with much excitement and perturbation, as those whose exertions are of a *plodding* character; and these generally seem to suffer in the way as some artisans, viz., from the deficiency of muscular exercise, the invigoration of the atmosphere, &c.

On the other hand, *deficiency of intellectual exertion* as a cause of the disease, seems to have escaped observation. I have been led to think that this in certain mental constitutions peculiarly predisposes to dyspepsia. "Mind tends to action," or, to quote the expression of another physiologico-philosopher, exercise or action is a "want" of the intellect. This tendency or want will exist in proportion to the extent of the mind's capacity for exertion, and, like all the instinctive impulses and demands implanted in the human constitution, it must be fulfilled and gratified, or the economy will suffer.

That the peculiar morbid phenomena which constitute dyspepsia, are, in a great number of instances, produced by circumstances which repress or

obstruct the exercise of a degree of the energy of mind adequate to claim, I feel assured observation with reference to this point will show to be, at least, highly probable.

With regard to the character of these circumstances, as well as the tendencies or wants of the individual mind, they are, to a certain extent, peculiar in every instance. A general description could not be given, which would embrace the facts of every case. But, agreeably to the general view which I would present, if we carefully examine the history of the cases which fall under our observation, we shall find that a large number of them, although in their details or particulars they may differ, are, nevertheless, to be associated, as it regards the causes which have produced and which perpetuate them under this common principle.

Nor is it intended to apply these remarks exclusively to those who are pre-eminently intellectual persons. The mental energy may be expended on other than literary and scientific objects—in the performance of any occupation not wholly mechanical, in the fulfilment of the various responsibilities of life; and its obstruction as it regards the latter may be attended with the same results as in the former case.

According to this view, the disease under consideration, is consequent to the unnatural condition in which many individuals are placed as it regards the exercise of the various faculties and powers of mind; or, in other words, to a want of correspondence between the mental constitution and extrinsic circumstances. By the term *mind*, and the expression *mental constitution*, I would embrace all that appertains to the moral as well as intellectual powers and faculties. My remarks have had more particular reference to the latter, but in many, if not the larger proportion of individuals, the wants of the moral nature—the affections and sentiments—predominate over those which are purely of the intellect, and there is reason to believe that similar results may follow *their* obstruction or perversions. Indeed, it is probable that instances of the latter are more common than of the former.

It may be said, on the supposition that this explanation of the origin of the disease be correct, why are not its peculiar aberrations the direct effect of causes operating on the mind, without the intervention of the digestive organs. This is not probable in the first place, from the *constancy* with which they are associated with derangement more or less of these organs, together with their *distinctive traits;* and in the second place, it is not presumed that *all* cases of dyspepsia originate in this manner.

The successive agents, then, in the development of the disease will be *threefold:*—

1. The operation of the mental causes.
2. The affection of the digestive apparatus.
3. The reaction of the latter upon the mind, producing those mental aberrations which characterize the disease.

From this doctrine is derived a sufficient explanation of a fact which has been mentioned, viz., that dietetic errors are persisted in often with impunity by those whose strength of constitution and powers of endurance are apparently no greater than of those who suffer.

According to the view entertained, those very dispositions which incline to sense conjoined with a mental condition which is satisfied with sensual indulgences, go far to obviate their injurious tendencies.

3. It remains to make some remarks upon the therapeutic indications derived from the preceding considerations.

Dyspepsia, unlike most diseases, tends, from the natural reaction of mind and body, to perpetuate itself. It seldom furnishes occasion to observe the influence of the *vis medicatrix naturæ*. It is only necessary to appeal to those who have had much practical acquaintance with the disease for confirmation of this remark.

It is also well known, that in numerous cases, all the various modes of medical treatment recommended, accomplish but little toward restoring the patient to a healthful condition. The truth is, in the majority of cases, the patience of the physicians is exhausted, by the inefficacy of the remedies prescribed; or the patient, after application to different members of the profession, and experimenting with the thousand and one empirical nostrums, relinquishes all expectation of benefit from the materia medica.

But the inquiry arises, if it be true that the disease, in a large number of cases, is to be attributed to causes existing in the mind and its relations, would not the philanthropic physician be able to afford, in many instances, effectual service by suggesting measures which have reference to these, in addition to those appertaining to the materia medica?

It is too common for medical advisers to pay but little regard to the mental aberrations peculiar to this disease, thinking that, in the language of Shakspeare,

> "Therein the patient
> Must minister unto himself."

To examine them with attention, and, if possible, to afford relief, would, under any circumstances, be embraced within that philanthropy which should be inseparable from the practice of our profession, but, since they depend upon physical causes, they are to be regarded as morbid symptoms, and fall, legitimately, within the province of the healing art.

If physicians were more generally and fully impressed with this view of the subject, perhaps the disease under consideration would become less an *opprobrium* than it, confessedly, now is.

It may, then, be stated as the first important rule in the treatment of the disease, to ascertain fuliy the kind and degree of mental aberration which exists. To listen with patience and sympathy to all the changes of feeling which the patient is ready to describe, if he receives encouragement to do

so, is, in itself, a source of much consolation, and goes far to secure to the medical adviser the possession of the entire confidence of the sufferer.

In connection with this, the mental characteristics of the individual, his habits, education, &c., are to be considered, both as enabling us better to appreciate the nature of the changes which have occurred, to decide upon the remote causes of the disease, and to determine upon the measures to be recommended with a view to restoration.

In the second place, it is important to satisfy the patient that the altered condition of his mind and feelings is symptomatic of a morbid condition of body. This is often so little suspected, that his unhappy state is not described until inquiry is made relative to this point. But, as soon as the patient finds it is suspected as associated with the disease, he gladly becomes communicative. It is truly pleasing to witness the surprise and animation which lights up the sombre countenance of the unfortunate dyspeptic, when he finds that the state of his feelings is anticipated by the physician. He seems to hail it as a favourable omen. If the idea has never been suggested that his unhappy condition is the effect of a disordered body, it furnishes the first occasion for hope; and whether restoration is effected or not, he is enabled to resist and sustain his trials with more fortitude and perseverance.

The next object will be to endeavour to remove the causes which have originated or which maintain the disease. But inasmuch as these are very multifarious, and their different varieties have not been considered, the remarks upon therapeutical principles will of course be very general. Each case, in fact, should form a separate study; but in general terms, the patient should be urged to provide that particular kind of stimulus for the intellectual and moral powers, which he seems to require.

In some instances, the difficulty seems to consist chiefly in the monotony incident to routine duties. Then, the indication is to vary their character, or advise a temporary interruption. In such cases, travelling is highly useful; but, frequently, to be permanently efficacious, it should not be confined within a narrow sphere of time or space. Especially foreign travel is useful by the increased excitement and interest derived from the comparison of scenery, and the habits, manners, and institutions of other countries. But this unfortunately is a measure which only in a small number of cases can be adopted. Those means alone can be embraced which are accessible at home. These, however, are not few or powerless. Sometimes it may be proper to advise an entire change of occupation and locality, in order to supplant completely old by new associations. This method, which has been found of such utility in mental derangement, would, probably, be not less so in cases of partial alienation, as these cases must be regarded.

When this is not advisable, or practicable, other measures must be adopted to rouse the faculties of the intellect and the moral sentiments. One of these is the commencement of certain branches of study, or some plan of intellectual effort. Those departments which are pursued by means of

observations and experiments rather than abstract contemplations are to be preferred. This will of course apply only to those who have leisure, inclination and capacity for such occupations, and to that class who require more especially excitement of the intellectual faculties.

In other cases, the social and moral sentiments are to be operated upon by the formation of new connections, assuming new responsibilities, and by directing the mind to objects which are calculated to engage the feelings of benevolence and philanthropy—such are politics, the cause of popular education, and the numerous particular plans of every scale of magnitude, tending to the amelioration and improvement of the human race.

The selection of any of these measures, as has been already remarked, will depend upon the combination of circumstances which distinguish the cases individually and is to be left to the discrimination of the medical adviser.

The hearty co-operation of the patient is of course requisite to the prosecution of any plan, and with a view to this the whole subject should be fully discussed and the state of the case frankly stated. One good result will at least accrue from such a course; it will tend to preserve feelings of respect for the character of the medical profession with a class of patients whose experience of it too often leads them to entertain opposite sentimeuts.

Buffalo, *August*, 1840.

Art. IV.—*Two Cases of Aneurism, exhibiting the necessity of a Ligature, both above and below the Tumour.* By Wm. E. Horner, M.D., Professor of Anatomy in the University of Pennsylvania.

Case I. *Varicose Aneurism of the Femoral Artery.—Operation followed by Mortification of Limb and Death.*—Col. P., of Florida, ætat. 30, stature 6 feet 2 inches, usual weight 170lb, while engaged in the service against the Seminole Indians, was wounded, April 15th, 1837, by a ball accidentally discharged from a pistol which he wore under his waistcoat. The ball was rather larger than a buckshot (say 80 to the pound.) It entered the left thigh two inches below, and a little within, the anterior superior spinous process of the ilium, and ranging very nearly in a line with Poupart's ligament, came out on the inner side of the thigh a little below the scrotum.

There was profuse hæmorrhage, estimated at from 8 to 12 pints;—the patient fainted immediately and continued insensible till the next day. An extreme swelling of the thigh followed—numbness and irregular sensations, with some slight bleeding at intervals afterwards.

July 8th, 1837. His present state is one of considerable emaciation, but his spirits are very good. The left thigh has a strongly pulsating tumour

just below Poupart's ligament, and in the course of the femoral blood-vessels; the tumour appears to be two or more inches in its transverse diameter, length not so discernible; its pulsation is arrested by pressure on the femoral artery above; also by pressing on the artery at a point corresponding with the track of the ball, and where there is a sensation imparted of a hole in the artery; the femoral vein feels enlarged as it goes under Poupart's ligament, and has a pulsation in it. The superficial veins of the leg are smaller than usual, the saphena scarcely perceptible. To the finger the tumour has the thrill and vibratory motion of varicose aneurism, and a stethoscope applied to it conveys a noise like that of a distant waterfall or mill race, broken in upon by a pounding corresponding with the beat of the heart, and intermixed with a loud quick purring like that of a cat going to sleep. It is extremely sensible to pressure; the extremity is useless; the patient's common position is on his back, with the thigh in a state of semiabduction, and brought a few degrees forward to loosen the parts at the groin.

The pulse of the wrist has a short globular stroke with a very distinct interval; a very strong pulsation is felt in the epigastric region extending to the umbilicus, a feeble wavy pulsation is also felt in the right femoral vein just at Poupart's ligament. The probability is, that the latter, as well as the epigastric pulsation comes from the arterial blood flowing from the left femoral artery into the vein and thus giving a pulsation to the ascending cava and its branches.

11*th.* He was operated upon in the following manner, by Dr. T. Harris, his attending surgeon, with whom I acted in consultation. A fold of the skin being pinched up was slit in the course of the femoral artery, and by careful dissection, the artery was exposed immediately below Poupart's ligament; the tumour also was partially seen. As much of the sheath of the artery as could be was left; an aneurism needle fastened to a handle, and with a single ligature, was then passed by myself from the outer side of the artery around it, and the artery tied by Dr. Harris. The pulsation immediately ceased in the tumour, the epigastric pulsation also ceased, and that of the femoral vein of the other side; the pulse at the wrist made a longer and more sustained stroke.

The operation was borne with the most manly fortitude. The afternoon and evening were spent in high excitement and restlessness from violent pain flying to different parts of the limb and hip and finally settling in the incision, where the sensation was that of every thing tearing to pieces. It was directed at 9 o'clock to keep four leeches in relays on each temple for an hour, and to give an injection, mur. morph. 0.5 gr. every two hours.

An examination of the venous circulation in the foot at this time, showed that it was going on; temperature of limb extremely low; it had been surrounded by cotton and a warm brick put to the foot.

12*th.* An exceedingly restless agitated night was spent; took only one injection. The foot and upper half of thigh present the appearance of pur-

pura ecchymotica, from the slow circulation in the veins; slight infiltration of blood. Temperature of upper half of thigh good, below that the extremity is cold. Complains of severe pain in incision and in left testicle. ℞. Pulv. Dov. ℈j, Gum. Arab. ʒj. M. Ft. Pulv. div. in chart No. vi. One every two hours with some hot lemonade. 12½ o'clock more tranquil, has dozed.

13*th*. The Pulv. Dov. has had a most tranquillizing effect; he slept well during the night; stomach slightly sick.

The circulation of the limb very slow, and rather equivocal; a cadaverous coldness of the limb from the middle of the thigh downwards, and especially manifested on the knee. Dover's powder continued; about night he vomited, and was relieved of nausea by it; complaining of colicky feeling in the evening, an injection of warm water was administered which brought away a considerable quantity of gas.

14*th*. Had a tolerably good night; coldness of limb continued. An oblique circle on thigh, about one-third of its length above knee, of extravasated blood, which had showed itself somewhat from the day after the operation, is now more distinct, and seems to indicate an arrest of the circulation of arterial blood there. Beginning about six inches above the knee, and being half an inch wide, this circle passes on each side towards the ham; the foot looks blue and discoloured; the veins from it upwards flabby, and presenting slightly the appearance of an exosmosis of blood along their trunks and branches, such as occurs in the dead body. 9 A. M. Bottles of hot water placed along the limb. 1 P. M. They were discontinued, owing to the inconvenience of fixing them, and bags of heated oats substituted. 9 P. M. Limb warm, of a better colour, and circulation apparently somewhat improved.

15*th*. The cuticle about the knee loosened itself last night, and the warmth of a bag of oats resting upon it, dried up an area of skin where the cuticle was detached, about the size of a dollar.

An evident plumbaceous tint to all the extremity below the oblique circle on thigh (*purpura ecchymotica*); no sensation in it; slight fœtor: exosmosis along veins more spread. Wound dressed, looks well.

16*th*. Symptoms of sphacelus below the oblique circle now fully exhibited in the cuticle being every where loose; with the limb of the colour of white paint turned black by the action of sulphuretted hydrogen gas; entire want of sensation in it, with exosmosis of blood more spread.

The thigh above the oblique circle swollen and extremely sensible. Patient lively; tongue clean; pulse a little more frequent than natural.

In the evening, a healthy evacuation from the use of sulphate of magnesia during the day. Wound dressed; suppurates; looks well.

It may be remarked here that the patient having come to town with an ulcer on the external ankle of the affected leg produced by pressure, this ulcer continued for two days after the operation, as it had previously been very sensible; but from a state of suppuration, it oozed nothing but black

blood after the time of the operation. On the 16th, the skin all around it was black and sphacelated.

17*th*. Disposed to be excitable and flighty, mortified part very black, and boundaries strongly marked. Wound from operation, suppurating well. Sol. chl. sod. to gangrene.

18*th*. Thigh above mortification extremely sensible, and swollen largely; reddish; veins enlarged with a languid circulation in them, and somewhat of a disposition to exosmosis of blood along their trunks. Mortification advanced of a black colour up to middle of thigh. Has spent a very restless semidelirious night—pulse 140 per minute. Wound has granulated and looks well; with a purulent discharge; latter blackish, however, perhaps from the lead in the sticking plaster.

19*th*. Mortification progressing upwards; general symptoms about the same with the addition that he is now under the influence of morphia, which is given to him every few hours. The limb is very black and tumid, and would emit a great stench were it not for the solut. of chl. of sod. which has been constantly on it. Camphor liniment in cloths to be applied to unmortified part of thigh. Morphia every few hours, so administered as to keep him tranquil.

20*th*. Mortification still advancing up the thigh; it is now only a few inches, below the groin, and the latter is tumid and inflamed. The dressing of the wound is very painful; this evening it gaps open an inch or more, and having ceased to suppurate, its bottom is covered with a thick coat of white coagulating lymph.

The patient was very restless during the forenoon; about mid-day, he was informed that his medical attendants were in despair of his recovery; his wanderings of mind ceased; he sent for a friend to make some arrangements, and then continued tranquil with a disposition to sleep for the remainder of the day. His pulse on two examinations, one at 5 o'clock P. M. and another at 9½, intermitted about every seventeenth stroke.

21*st*. All the symptoms aggravated since yesterday; some little oozing of blood from wound. On being further informed of the precariousness of his situation, he observed that if the artery gave way he did not wish the blood arrested, as the protracting of his life for a day or two more in the state he was in, could be of no use.

23*d*. Mortification still progressing upwards; morphia continued 0.5 gr. every three hours; other symptoms as usual; scrotum much enlarged; flabby; œdematous; of a black colour, with cuticle disposed to separate.

25*th*. A point of mortification which showed itself two days ago by a bloody vesication below the anterior superior spinous process of ilium has extended itself; scrotum to our surprise is now small; corrugated; firm; and cuticle sticking close, a new one probably having been formed in place of detached one. The mortified limb is perfectly black with the exception of a few inches about the knee, and emphysematous; maggots have been deve-

loped in great numbers under separated cuticle of thigh, leg, and foot; by means of spirits of turpentine we killed nearly all of them; fœtor of limb much corrected by the fomentations of chloride of lime.

26*th.* General condition of patient not worse than at preceding periods, mind clear and composed; hiccough. Thigh cut off through mortified portion to diminish fœtor, and to prevent the sulphuretted hydrogen gas from being driven between muscles, up to the trunk of body, which we suppose may already have accelerated the progress of the mortification upwards; operation about six inches below hip joint. Black drop (Quaker) 10 gtt. at night, to be repeated as required.

27*th.* Mortification progressed a few lines upwards; skin above it rather more healthy in its appearance; hiccough; pulse still intermittent at times. Bowels opened at night with a solution of sulph. of magnesia in soda water.

28*th.* Mortification seems to be arrested; skin contiguous looks like an effort to detach mortified part; cut off some large pieces of muscle and skin that were entirely dead; original wound suppurating well; hiekup still continues. Prescribed for latter, Mist. Moschæ, ℥ss, every hour. Put a poultice of Indian meal and porter on stump.

Hiccough still continues at 1 P. M, but patient collected and cheerful. He was permitted to use English Brown Stout and Champagne with water for a common drink.

Finding in the evening that the hiccough continued, I abandoned the musk mixture, and gave 3 gr. pulv. Dover, every two hours.*

29*th.* The pulv. Dov. had the effect of allaying the hiccough, and procuring a night of tranquillity. On dressing the stump, found the original incision suppurating finely, and looking well, notwithstanding that sphacelus had reached its inferior end. The sphacelated muscles are in a state of putrescence, soft and shortened; found a sphacelated sinus as broad as the four fingers under the gluteal fascia, above the trochanter major; it seemed to have been formed for some time, and probably preceded the sphacelation of the skin in an angle above it. Muscles of the crus of the pubes and ischium sphacelated to within a little distance of their origin. Dressed stump at 9 o'clock with cataplasm of Indian corn meal and Durand's solut. chl. sod.

Dover's powder continued; hiccough returned this afternoon; gave in addition six drops of black drop. Pulse very intermittent, and irregularly so all day; prostration of strength increased.

When I saw him at 8 P. M., the pulse had increased its irregularity of stroke; the hiccough continued, but not so bad. He drank a tumbler of cold milk with great satisfaction; had his stump dressed with strips of lint im-

* At this period, the principal duty of attendance devolved upon myself, owing to Dr. Harris's health being so deranged that it was absolutely necessary for him to retire from the city for the benefit of the country air, and which he did with great reluctance viewing the critical situation of our patient.

bued with the sol. of chl. sod. Discontinued Dover's powder; ordered two drops of Quaker drop at 10 P. M.. and ten at 3 A. M. Cold milk to be given occasionally during night.

30*th*. On calling at half after 6 A. M., found him in a very tranquil sleep; and learned that he had spent the night in moderate comfort. 9 A. M. Countenance clear; tongue nearly clean; mind vivid. Mortification seems definitively arrested, and the work of elimination going on, by a seam between dead skin and living which is open here and there for two or more inches, and suppurating. Some of the muscular shreds semifluid from putrefaction; removed them. Pus begins to be secreted copiously from the inlets or fissures in stump, between muscles and skin, especially under a loose flap.

Directed an exclusive milk diet; dressed stump again with bits of lint impregnated with sol. of chl. sod. 9 P. M. Strength good; day passed in alternate rest and agitation; hiccough still continues; has taken some doses of Quaker drop. Process of separation of dead from living parts progressing handsomely, especially as regards skin, which is now almost ready to be detached. Renewed his bed arrangements; repeated same dressing on stump with basilicon on skin and place of original operation. The gluteus medius muscle under the flap of skin, feels as if it was converted into a soft putrid pulp. Directed a renewal of opiates during night; and tea-spoonful of Hoffman's anodyne to relieve a spasm in the glottis occurring during hiccough.

31*st*. Found him at half after 6 A. M. in a deep sleep, with warm perspiration, and some singultus. At 9, dressed stump; seams between living and dead skin more open and loose; removed several large pieces of dead skin, and some bits of muscle; suppuration free and healthy from exposed living surfaces. Dressing, chlor. of sod. with lint. Day spent in comparative ease, till towards the close of the afternoon, when his stomach became sickened by a piece of bread. A good discharge from his bowels, owing to a solution of ℥j. sulph. Magnes. in Soda water given about 10 A. M. Dressed stump this evening at 8 o'clock, with Ung. Basilicon after pouring some sol. chl. sod. over it; and gave a dose of solut. of sulph. morph. gtt. xl, to be repeated gtt. xxx, at 1 A. M. It is now a subject of habitual remark to us, that the singultus stops whenever he is in pain from dressing the wound and stump.

August 1*st*. Has had a good night, with the exception of severe singultus occasionally. Dressed stump at 9 A. M, and found suppuration proceeding finely, as well as the loosening of the sphacelated skin and muscles; small portions of both cut away. Dressed with basilicon on lint; covered this dressing with a cloth imbued with sol. chl. sod.

Day spent in considerable exhilaration of spirits; cheerful lively conversation with friends; breakfast of mutton chop; dinner of beef steak.

Dressing as in morning renewed at 8 o'clock in the evening; gtt. xl solut. sulph. morph.; and gtt. xxx, to be taken at 1 A. M.

2*d*. An evident improvement in every respect. Cut away ligature from femoral artery, it being now the twenty-second day. Dressings and treatment as yesterday; spirits of patient excellent; hiccough almost gone. A whitish spherical tumour, an inch and a half in diameter, extremely sensible to the touch, but without pulsation, and which I had observed for a day or two, now attracted my attention particularly. I felt doubtful whether it was the aneurismal tumour; a cyst containing matter; or a tumour formed on the course of the anterior crural nerve. Having it on my mind, I expressed to Dr. Goddard, in consultation, since the departure of Dr. Harris, my uneasiness on the subject. This occurred at our visit and dressing at 8 P. M., and we parted about 9.

3*d*. Bowels spontaneously evacutated this morning about 6 o'clock. At 9, found that our patient had passed a good night. Determined to explore the character of the tumour which had obtained our attention, I began to dissect from it the mass of mortified muscle at its inner side, and then made a puncture into it; a flow of arterial blood immediately followed. I passed my finger into the orifice to check the hæmorrhage, and to obtain time for reflecting on its cause and the mode of proceeding. My first idea was, that I had acted prematurely in taking away yesterday the ligature from the femoral artery; but from this scruple, I was relieved by ascertaining that pressure on the femoral artery did not stop the bleeding; consequently, there must be a collateral supply of blood. I then determined to explore the whole circumference of the tumour, and to surround it in every direction with ligatures; with that view, I cut through an isthmus of living matter, in front of the femoral vessels, consisting principally of fascia, and some adhering cellular substance. On doing which, it became clear that the tumour was aneurismal, and that the disease had returned. I also perceived a very thin cul de sac, hemispherical, and half an inch in diameter, connected with the aneurismal tumour and pulsating strongly. In the manipulations of the sac this tumour burst and bled freely. I then proceeded in tying in masses every thing connected with the sac, in consequence of my finding the structure so altered, and so many vascular connections of the sac, that the ordinary arterial arrangement was much modified, if not radically changed. I put ligatures above in the line of the femoral artery, another in the direction of the os femoris; another in that of the pubes, and another between the most posterior face of the tumour, and the trochanter minor. The latter being done according to the suggestion of Dr. Goddard, who, during this time held the aneurism in a state of compression which arrested the bleeding, and saved us from the distress of seeing our patient die on the spot.

These events were attended with a flow of blood from the original seat of the operation, and I then supposed that the artery had ruptured at the spot where its ligature had been, but when all the new ligatures had got their position, this bleeding ceased, so that the probability is, it came from a retrograde instead of a downward current of blood, and which was proved in the

dissection after death. The obscurity of the vascular connections of the aneurism, and of its internal arrangements compels me rather to conjecture than to state it as a point ascertained, but I am of opinion that the place punctured by me first was the enlarged femoral vein; and the protuberance which ruptured was the aneurismal sac. The principal part of the bleeding and the most rapid gush of blood was certainly from the latter; the orifice of communication between the two vessels, was, therefore, still open as it had been.*

Returning at half after 1 P. M., found the dressings beginning to soak with fresh blood, of which the patient had lost about a gill or more. I opened the stump, and secured some small arteries near the capsular ligament of the hip joint, which had been cut in the previous affair. A faintness of a most deadly and unpromising kind now came over him; his pulse almost unaccountably rapid and feeble; his respiration in long heaving efforts; complexion cadaverous: and a cold copious exhalation from every part of him. (The day was very warm, as the thermometer stood in the shade at 82.)

He continued, with slight variations of symptoms, improving and then receding, and hanging, as it were, on the skirts of life, during the remainder of this day. A table-spoonful of volatile julep was administered every twenty or thirty minutes, with an allowance also of mint julep. At 10 P. M., some augmentation of pulse; the volatile julep was then for the rest of the night given every hour, or else some rich beef broth; and as he now became very drowsy, he was not permitted to sleep on any account more than an hour at a time, but to be roused up to take his medicine or nourishment.

4th. He feels sensibly his weakness this morning, and his spirits are more broken than before, with his mind, however, perfectly tranquil and collected. No hæmorrhage; stump easy. On dressing it at 9 A. M., the suppuration was observed to have been resumed at the points where it previously existed.

The day was spent under the use of nourishing diet; he begins, however, to be troubled with pain in the right side of the throat, about the origin of the œsophagus, and is unwilling to swallow; we have, therefore, to urge him. This pain is attended with a collection in the pharynx of an inspissated mucus, which is raised with difficulty. I prescribed for this affection, frictions of volatile liniment.

* Having apprehended some such trying scene as the present, and feeling a distrust in the facility of applying the usual fixed needles for hæmorrhage, I had prepared, some days beforehand, and kept ready in the room a hæmostatic needle of a design somewhat novel. This needle, with the prompt and expert aid rendered to me by Dr. Goddard, I found invaluable in proceeding rapidly and systematically to secure so many routes of arteries. The instrument has since become the subject of a communication in the Medical Examiner of 29th August, 1840.

[A figure and description of this instrument will be found in the American Intelligence of the present number of this Journal.—Ed.]

In the evening, had a well-marked fever, with pulse of some force. Took gtt. xxx sol. morph. at 10. No hemorrhage to this time; did not dress stump; fœtor considerable.

5th. Spent last night tranquilly; had a slight chill about 7 A. M., which ended in a fever with copious perspiration which was over about 1 o'clock; at this time, we changed his shirt and bedding, at which he expressed great relief.

Dressed stump at 9 A. M.; sphacelation of parts included in ligatures of 3d inst., very distinct, except skin in front; old sphacelated muscles, being the adductors, black and pulpy; flap contracted and thickened; suppuration healthy and abundant; no hemorrhage. At 1 P. M., began to administer ℥ij. of infus. of serpentar. every two hours, which was discontinued in the evening. Morph. solut. gtt. xl, at night.

6th. The patient is somewhat recruited; ordered an infusion of Cort. Peruv. with elix. vitriol; ℥ij of former, to gtt. v of latter every two hours. Pain in the throat augmented, and an uneasiness extending down to the epigastric region. I prescribed in the evening, for the relief of the viscid expectoration as follows: ℞. Gum Arab. ℥j; Aq. fluv. ℍ j; Elix. paregor. ℥ss: Acid. lim. ℥iss; Sacch. q. s. M. Dose of two ounces to be repeated every two hours during the night; gtt. xl, sol. morph. to be put into the first dose. At the dressing in the morning, we perceived that the suppuration of the stump was going on.

7th. Dressed the stump at 9 A. M, and removed from it a considerable quantity of putrefied mollescent muscle. Parts included in ligatures of 3d inst. black, mollescent, putrefied, and furnishing no hemorrhage.

The removal of the sphacelated muscles brought into very distinct view the ischiatic nerve, which I observed at the time of the amputation to be alive and very hard, and that it bled at the end, though surrounded by mortified parts. It was now tumid, more than half an inch in diameter; inflamed, red, and manifested most intolerable pain on being touched. The exposed living parts suppurating. He suffered extreme pain on this dressing, and was enfeebled by it.

At 1 P. M, he was much oppressed with sleepiness; in a drenching perspiration; and his pulse very quick and enfeebled. As he lay in bed, he resembled a breathing corpse and was so debilitated, that some changes in his bed and personal attire which were then contemplated, were postponed till evening.

He began at 7 A. M., to take the infusion of bark with elix. vitriol, and continued it every two hours during the day till 10 at night. At 11 P. M., took xl, gtt. solut. morph:, and two doses of the infus. cinchon. and elix. vitriol during night. This day was spent in great debility, but in the evening, he revived somewhat.

Tuesday 8th. 28 days since the first operation. At 6 A. M., I found him much debilitated from a drenching perspiration; his voice feeble and plaintive. He complains much of his mouth which is becoming aphthous;

ordered a wash of sage for it; and gave him a parboiled egg, to be repeated every two or three hours. Discontinued infus. of bark and elix. of vitriol, under an apprehension that the quantity of fluid favoured his perspiration. Determined also to discontinue opiates at night.

At 9 o'clock, dressed stump; the granulating parts looked well, and had discharged a good pus; removed some of the sphacelated pulp on adductor muscles; the aneurismal tumour is black, dead and almost ready to drop off. The ends of three nerves are now exposed for an inch or two and are in a state of inflammation; the sciatic; the obturator; and the anterior crural, all of which give excessive pain on the lightest touch. Put basilicon along the edges of the stump, and covered its face with dry lint; fixed some sticking plaster strips to bring up flap, and Dr. Goddard contrived a swing of the same for the sciatic nerve. Afterwards covered the stump with a thickness of unspread patent lint; and left off an oil cloth which had been heretofore used to cover it.

Indications of a bad ulcer on point of coccyx, and on the posterior superior spinous process of right side; changed his bed-clothes. Observed that the air bed of gum elastic cloth which he had used heretofore, had collected a large quantity of moisture, on all the surface applied to the back of his thorax, from the perspiration. Sudamina on abdomen.

Extremely ill in the evening; pain in right shoulder in which he had received a pistol ball when he was 19 years of age; pain in hips; fever and excessive perspiration; discharge of stump diminished. Raised him up and put three folded blankets between him and his air bed, for the purpose of making it softer, and preventing the accumulation of moisture under him. He took during the day three eggs and some boiled custard.

9th. 6 A. M. In profuse perspiration; difficulty in swallowing still continues; slight delirium and incoherence. Evident declension since yesterday, but not so rapid as I expected. At 9 A. M. on visiting, found a small puddle, one ounce, of coagulated blood between his buttocks. This produced strong apprehensions that some vessel of importance had given way; and before any thing more was done, I got my instruments ready for a serious operation. On raising up integuments, I found two small strings of coagulated blood, which I traced to their source in the base of a process of integuments, where the ligature of the 3d inst. had been fixed on it, and on the trunks of the femoral vessels leading to the aneurismal sac. The latter was now nearly detached, adhering only by two or three vascular filaments; on cutting through the latter, the sac fell off, and a little dry lint stopped what remained of the hemorrhage.

The slight loss of blood seemed to have relieved his delirium; stump suppurates freely, and looks well. It is now a fair granulating surface, with the exception of the origins of adductor muscles in part, and of the hamstring. The sphacelus has swept away the muscles of the thigh; clear up to the obturator externus, the small rotator muscles on the back of the buttock

are visible, and also in a granulating condition. The insertion of the gluteus magnus is left.

He spent this day in such extreme illness with delirium, that it was not thought proper to change his shirt or disturb him in any way, except by administering such articles as he called for.

In the evening, the stump was found to have suppurated still more freely; probably, in consequence of its having been covered more closely with basilicon than it had been the day before.

10*th*. 6 A. M. Mind more collected; voice better; swallowing better; pulse full, strong, frequent; skin warm and contracted. Has not lost in strength for twenty-four hours. At 9 A. M., dressed stump, and found that it had suppurated well since last evening; mortified muscles still detaching; cut off some ounces of them. Inferior end of femoral vein seems to be open, which imparted a suspicion, that the bleeding of yesterday had come from it, at least in part. Dressing as usual, painful. At 1 P. M., raised him up changed his bed-clothing and his shirt, all of which he bore well; bed ulcers not worse. He spent this day on the whole, in a better state than the preceding.

11*th*. Has had rather a bad night; debility increased; mind unsettled; respiration hurried and laboured, larynx moving up and down with each act of it; skin moist, cold and flabby with cold wrists; moribund rattle. In consequence of being raised in bed last night, about one o'clock a hemorrhage had occurred, apparently from the femoral vein. Dr. Goddard was sent for, but it had stopped on his arrival; its amount was an ounce or two. His stump was also flabby; the secretion of pus had diminished, and was rather greenish. The sciatic nerve, from being tumid, hard, and with a feeling of erection in it somewhat like a child's penis, was collapsed and flexible. There was also a cadaverous smell in his breath. In short, every thing indicated that a life, protracted under such difficult circumstances, is about yielding. On dressing him at 9 A. M., I introduced a dossil of lint imbued with a strong solution of sulphate of copper into the femoral vein and also into the femoral artery, and sustained them in position by a roll of patent lint, at their base.

He died on the morning of the 12th, at half after 3, without a struggle.

12*th*. *Necropsy* at 12 A. M. His frame had become extremely attenuated and emaciated. The viscera of the abdomen were perfectly sound. *Stump.*—All the muscles whose insertion or attachment was below the trochanter minor had sloughed or sphacelated to their origins, excepting the gluteus magnus. The cellular substance surrounding the sciatic nerve was sphacelated to within a few linesof the sciatic notch. This nerve was still more flabby than at the dressing of yesterday morning at 9 o'clock, and was covered with a thick coat of coagulating lymph.

The os femoris was in a state of necrosis up to the epiphysis formed by its head, and by the trochanter major. On being opened with a saw, a dark-

ish serpentine line indicated the demarcation of the previously dead part; and the cells of the latter appeared to have undergone a limited suppuration. The bone being struck on its head, before it was sawed open, emitted a hollow sound. Some pus was found in the hip joint, the synovial membrane of which had a dark appearance. The anterior half of the cartilage of the os femoris was thinned by absorption apparently from the surface, which may have been done by the contiguous synovial membrane which covers the capsular ligament, as the cartilage from the fixed position of the limb had been, probably, since the original accident in contact with the synovial membrane; part of the cartilage in this region of the bone was entirely absorbed. The capsular ligament was sound.

The femoral artery just above the place of the original ligature was converted by its influence into a cul de sac; the bottom of which was firm, adherent, and about a line in thickness, and had a conical coagulum of bloody fibrine adhering firmly to it, about three lines long—with the apex upwards, and terminating at the orifice of a small artery, perhaps one of the external pudics. To this apex was appended a filament of the same fibrine, an inch or more long, running upwards in the canal of the artery.

Exactly where the ligature had been placed, the artery had been cut through by it, and the canal of the artery put on the appearance of a dilatation, and was continuous also with the original wound now reduced to the state of a small conical cavity. The artery was pervious from that to its inferior end. Trunk of artery thickened.

The femoral vein was open below; a probe passed unobstructedly from its inferior orifice upwards *sine limine* into the iliac. It was enclosed, as well as the iliac and the lower part of the ascending cava in an additional coat of tenacious fibrinous matter, which made them adhere firmly all along their course to the corresponding arteries and subjacent fascia iliaca. The external coat of the femoral and iliac vein was thickened and hard; and the internal coat exhibited the remains of strong inflammation, by its irregular slate-coloured surface, covered with a deposit of coagulating lymph. This appearance and deposit went up the ascending cava on its left side for two or three inches and there terminated in an angular manner. On the cava of this region were found some two or three plates, oval, half an inch in diameter, looking very much like the glands of Peyer in the intestines. Some lymphatic glands in a state of suppuration containing a small quantity of fetid slate-coloured pus existed in the course of the iliac vessels. No suppuration existed around the rectum and bladder.

Thus finished this most important case of aneurism, and the reflections arising from it are:—

1. Did not the mortification ensue from its being easier, on the ligature being applied to the femoral artery, for the arterial blood to flow by the anastomoses of the obturator, gluteal or ischiatic arteries into the circumflex—thence into the sac, and return thence by the femoral vein, than flow to the

foot and parts below the groin? The freedom of this anastomotic communication with the sac was proved, by the aneurism continuing, though the main current of blood through the femoral artery was cut off, as proved by the necropsy. Would it not, therefore, be always proper to secure in every direction the arterial trunks, primary and collateral, communicating with a varicose aneurism, so as to force the blood downwards to the limb below, and thus prevent the possibility of its returning to the vein without a complete circulation?

2. Did not much of the extent of this mortification, at least in the thigh, depend upon the deleterious gas generated by it below, forcing itself upwards by emphysema under the skin, and between the interstices of the muscles? In those cases, therefore, is it not better to open freely the integuments and even the fascia to prevent such an accident, or to perform amputation?

3. Without the hemorrhage of the 3d inst., and the severe operation attending it, would it have been possible to save the patient, inasmuch as he was so well on the 2d?

4. To what are we to attribute the necrosis, or premature death of the os femoris—to the disease or to the operation which shut off the supply of blood to the part?

5. What produced the inflammation of the hip joint, and what was its date?

6. What was the date of the inflammation of the vein;—did it correspond with the progress of the mortification, or was the ligature of the 3d inst. its cause?

7. What influence had this venous inflammation, and also that of the three nerves, the ischiatic, the obturator, and the anterior crural on the constitutional symptoms and the final failure to cure?

8. The sensibility to pressure from which the patient suffered so much at the first consultation, that he felt the pain twenty-four hours afterwards, what was its source? Did it arise from the then existing inflammation of the femoral and iliac veins? The thickening of these veins, and the additional perfectly organised coat thrown over, indicate an inflammation anterior to Dr. Harris's operation, and probably from the time of the wound. This inflammation suffered an exasperation immediately following the mortification; a second one afterwards; and a third also from the operation of the 3d of August, judging from the recent appearance of the coagulating lymph, on the interior of the vein.

Would it not, therefore, be proper in all those cases of painful sensibility in the aneurismal tumour, and the vein leading from it, to endeavour to diminish the inflammation by leeches, poultices, and so on, and to cure it if possible, before an operation?

9. Ought we not, before obliterating a main arterial trunk, to spend, if it be at our option, some time in dilating the collateral branches, by pressure on the trunk itself, interruptedly applied? This salutary practice appears to have fallen into unmerited disuse.

Case II. *Aneurism from Venesection.*—Miss B., of Georgia, ætat. 8 years, being exceedingly ill in March, 1837, was bled by a physician in the left arm, at its bend. Nothing unusual at the time was perceived, but in a week afterwards, she felt a small pulsating tumour, the size of a pea: it continued to increase, and she was brought by her parents to Philadelphia, and placed under the charge of Dr. J. Randolph, who called me into consultation.

At this time, September 27th, 1837, the tumour is about the size of a large filbert; has a strong pulsating motion which may be felt vertically; laterally; and also when the arm is bent, and the tumour pulled up from it. Pressure diminishes its size to one half; it then remains hard and unyielding. Pressure on the brachial artery arrests its pulsation. There is no thrill or purring noise as in varicose aneurism; the vein which was opened at the point of bleeding, is not visible.

On the 29th of September, an operation was performed by Dr. Randolph, the course of the blood being regulated by a tourniquet on the arm. The skin was slit up for two or three inches in front of the tumour, which exposed the tumour beneath the fascia of the arm and the aponeurosis of the biceps; these being dissected through, the tumour was laid bare by continuing the dissection over its surface, so as to exhibit the brachial artery and vein both above and below it. A ligature common to the two vessels was then carried under them, above the aneurismal tumour; it, upon trial, was found to control the pulsations of the tumour; it was then fixed, and the aneurismal tumour cut open. Upon slacking the tourniquet, blood issued from the tumour freely; a ligature was then fixed upon the artery and vein below the tumour; upon loosening the tourniquet again, blood flowed from the tumour, but not so freely. The tumour was now detached still more from its bed; a knife-handle passed under its middle, and along it, one ligature conveyed above, and another below; these ligatures were directed in such a way as to insulate the tumour completely, by being tied above it and below it; the one below being drawn first was found to restrain the bleeding completely, but to make every thing secure, and to put the disease beyond any possibility of recurrence, the upper ligature was also fixed.

The vein which probably was the one that had been bled was seen in front of the sac adhering closely to it; it appeared to be almost obliterated below, and was very small above. There was nothing like a varicose state perceptible in it; so that if it had really been punctured, the wound had healed.

The sides of the tumour were very thick, and indurated, which will account for its not being entirely flattened or collapsed by pressure before the operation, and there was no coagulated blood. Whether it was formed by a dilatation of the artery, or by a cyst on its side, was not ascertained, from the obscurity of parts during the operation.

The tumour sloughed off kindly in this case, and the wound healed by the 20th of October, the recovery being perfect.

ART. V.—*Report of Cases of Deformed Feet, treated by mechanical means alone, with a description of the Apparatus employed.* By HEBER CHASE, M. D., of Philadelphia.

IN deformities of the feet, whether there exist an inversion or eversion, the same principles will apply to their treatment. In these cases, whether the foot has advanced to the first, second or third degree of *varus*, as described by authors, the first step towards a restoration, consists in bringing the distorted foot into the same axis with the leg. This we have accomplished by means of an instrument represented in Fig. I. It consists of two parts, a brass splint, (*a*), and a steel plate, (*b*), connected by means of a malleable iron neck, (*f*), which can be bent, by considerable force, but will not yield to the power necessary to act upon the foot. The utility of this arrangement will be readily understood by the operator, because, in order to act to the greatest mechanical advantage upon the foot, the plate is required to be placed at different angles with the splint in different stages of the progress of restoration. The steel plate should be one inch in width for an adult, two lines in thickness, and extend to a distance equal to the interval between the ankle-joint and the ends of the toes.

Fig. I.

In cases of inversion of the foot, the brass splint is applied to the outside of the leg. It should embrace one-third of the circumference of the limb, and should extend from just below the knee to the upper part of the external malleolus. It is secured to the limb by the straps (*d*, *d*).

By means of this apparatus, the foot is brought outward towards the steel plate as far as possible, without occasioning much pain, and is then confined by the strap(*e*), which is thrown around the foot and passed through the fenestræ (*c*, *c*).

In the progress of the restoration of the foot, the strap surrounding it requires to be drawn more firmly from time to time, as will be mentioned in the report of cases.

In *eversion* of the foot, the brass splint is to be adjusted to the *inner side of the leg*, when the same principles will apply as in *inversion*.

The use of this instrument must be continued until the foot is brought into the same axis with the leg, and until the disposition to a return of the deformity has ceased.

The second indication to be fulfilled is to effect the proper flexion of the foot. This we have accomplished by means of the instrument represented in Fig. II.

It consists of a plate of brass (*a*) moulded to fit accurately to the back and sides of the leg, and extending from immediately below the knee to just above the malleolus. A second piece (*b*) formed to act as a sandal or shoe, equal in length, and a little wider than the foot. These are attached by a hinge, (*c*,*k*) so as to admit of flexion and extension. The leg is secured in the brass splint, by straps, (*d d*,). The foot is secured to the shoe by a strap, (*e*) wihch is thrown around the instep, then passes through a fenestra behind the heel, and the extremities being reverted, are returned over the instep, where they are secured by a buckle.

Fig. II.

There is also a strap, (*g*) intended to pass around the foot near the toes, in order to draw it outward, when flexion is being made. The fenestræ at the right and left of *b*, are for the passage of straps, when the instrument is employed in cases of eversion of the foot. *h*, *h* are two straps for approximating the extremities of the instrument. *l*, a knob for securing the straps.

By examining the instrument itself, it will be seen, that the appendage marked *k*, does not clasp the shoe firmly, but stands out from it to the distance of half an inch on each side. This appendage passes beneath the shoe, and is attached by its centre, at a spot just anterior to the fenestra, (*f*,) by a universal joint with a limited motion. By means of this arrangement, when it becomes desirable to produce some degree of abduction of the foot in cases of inversion, this object may be accomplished by drawing the strap *h i*, more firmly than its fellow.

The leg is to be placed in the brass splint *a*, the foot in the shoe *b*, the leg is secured by the straps *d d*, the heel kept down by the strap *e*, and if desirable, the loop of the strap *g*, thrown around the foot in cases of varus, to produce partial abduction.

During the progress of restoration, the straps *h i*, and *h*, are to be drawn, from day to day, more tense, as the foot yields to the action of the instrument.

In deformities of the feet varying from those above mentioned, the instrument employed, will be described in connection with the cases.

Case I. *Congenital Calcanean Club-foot of the left side; Restoration of the foot to a natural position by mechanical means, in twenty days.*—On the thirteenth of July, 1840, J. B. H. Esq., of this city, requested me to see his little son, a healthy robust child four weeks old, and whom I found to have a deformity of the left foot—(calcanean club foot of the worst variety.) The deformity is congenital—no cause can be assigned for it—Mrs. H. is the mother of several children, all of whom are perfect in their limbs, nor can there be traced a deformity either in the paternal or maternal branches of the family, both of which are numerous.

Fig. III.

Fig. IV.

The dorsum of the foot was drawn upward, in such a manner as to rest firmly upon the lower part of the front of the leg, whilst an obliquity caused the small toe to rest on a line with the inner side of the leg. See Fig. III.

From the tender age of the child, it was not to be expected that much rigidity of the misplaced parts could have taken place as yet; therefore, the foot could be brought nearly to its true position, by moderate force applied to it by the hand, whilst the leg and ankle were supported; but returned immediately to its distorted position when these efforts ceased.

There was some want of development in the foot and leg generally, when compared with its fellow; and at the lower part of the leg, where the dorsum of the foot rested upon it, the subcutaneous fat and cellular tissue were to a considerable degree wanting, and the leg, when the foot was elevated, presented a perfect cast of the dorsum of the foot.

For the relief of this deformity, I applied to the outer side of the leg, for the purpose of bringing the foot not only downward, but inward, an instrument extending from the knee to the bottom of the foot similar to that repre-

sented in Fig. I, with the plate *c*, bent at a right angle with the splint at *f*, and secured by the straps *b b*. The foot was then brought down to half the distance required for restoration, and secured by a roller passing round it and through the fenestræ.

For a few days, I saw this patient daily, afterwards, less frequently. At each visit I adjusted the instrument when necessary, bringing the foot nearer to the required degree of extension and eversion until the second of August, when it was brought to the correct position as seen in Fig. IV, and remained so when the instrument was removed.

Aug. 15th. The patient has apparently suffered very little from the dressings. Not even an abrasion of the skin has followed the use of the instrument, and the child enjoys all the proper motions of the foot with perfect freedom.

October 16th, 1840. This little patient has been able, for several days past, to stand even upon his feet.

Case II. *Congenital Inversion of the Right Foot, of the worst variety —(varus of the third degree)—Treated with Complicated Machinery for several months, with little or no effect.—Restored in thirty-one days by a simple apparatus.*—Early in the autumn of 1839, my attention was called to Samuel M'Kee Chambers, ætat. 2, who had a complete inversion of the right foot. He was walking upon the outer edge of the foot, which had formed for itself a perfect cushion, upon which it rested—the sole turning backward whilst the toes pointed directly toward he opposite ankle. See Fig. V. In addition to this inversion of the foot, there was a defect in the knee-joint, permitting the leg to revolve upon the thigh, to the extent of one-fourth of a circle, and by the application of some force, the toes could be made to point directly backward. This seemed to be owing to a change in the cartilages of the joint, and the relaxation of the capsular and other ligaments. The leg itself was somewhat smaller than its fellow, but the thigh appeared of its natural dimension.

As soon as an apparatus could be prepared, I adjusted it to the foot of the child, and kept it in constant use, until May, 1840, when finding that very little progress had been made towards a permanent restoration of the foot, and that the patient was very unwilling to wear the machine, the instrument was laid aside. The leg, however, had commenced increasing in size—the knee had acquired some strength, and the limb was brought partially to its true position.

July 1st, 1840. Having now succeeded in the restoration of other cases of deformed feet requiring more difficult treatment, I again returned to my patient.

On the 3d of July, I applied an instrument similar to the first of those described in the introduction to this paper, (Fig. I,) and by the 10th, the foot was brought on a line with the leg. On the 12th, the apparatus for

flexion, (Fig. II,) was adjusted, which brought the foot to the position as seen in Fig. VI, in thirty-one days from the application of the first instrument.

Fig. V.

Fig. VI.

Until the 15th of July, the foot was daily brought nearer to the desired position. Very little pain was experienced, no soreness was occasioned by the pressure, and the patient who is one of the most robust, obstinate, and restless of children, ran at large in the streets at will, during the whole treatment. An ordinary shoe was applied on the 12th of August.

This is the only instance of any deformity known to have occurred in this family, either in the paternal or maternal branches, and no cause can be assigned for it by the parents.

Neither the tendons nor the fascia plantaris offer any resistance to the permanency of the foot as restored, nor do the tarsal or metatarsal bones exhibit that rigidity which so often limits motion, until a late period after the foot is brought to its natural shape.

The foot in walking, assumes its proper position, and the patient does not limp or hesitate at all in his movements. The arch of the instep is not defective, and all the varied motions, even including abduction are performed as perfectly as upon the opposite side.

October 18*th*, 1840. Two weeks ago I called to ascertain the situation of my patient's foot, and found him in the street, bare-footed, and was told he had been without his shoes for three weeks. No relapse from the original restoration had followed, and on the 15th inst. I exhibited this case to my class in a lecture on deformities.

Case III. *Deformity of the Left Foot, not Congenital, (Pes Equinus of the third degree, of six years' duration, combined with Partial Inversion of the front part of the foot,) Restored in twenty-one days.*— The subject of this case, J. Arbuckle, ætat. 11, was soon, after birth, observed, according to the statement of his parents, to have an unusual stiffness in the ankles, which, however, in his earlier years gave him no material inconvenience. He was remarkably healthy, very active, and walked at the usual age of childhood.

Occasionally, up to his fifth year, he complained of a pain in the hip for a short time. This difficulty never attracted the attention of his parents, particularly, until the foot was observed to turn gradually inward, and the heel to become elevated. Medical aid was then called. Bandages and splints were applied, but the deformity proving very obstinate, they were abandoned.

During the month of April of the present year, I saw the patient for the first time. There was, at this period, a partial inversion of the front part of the foot by rotation at the middle joint of the tarsus, while the distance from the toes to the heel was five and three-fourth inches; the direction of the foot being nearly perpendicular as seen in Fig. VII.

Fig. VII.

Fig. VIII.

There was a want of developement in the glutei muscles—the thigh, leg, and foot were also smaller than those of the opposite side, and the whole foot was remarkably rigid. The tendo Achillis was very stiff, and the bones of the tarsus were prominent, as is seen in Figure VII, and in short, the limb had undergone all the usual changes which take place,

where it becomes necessary to sustain the weight of the body on the toes for a great length of time.

There was also a relaxation of the ligaments of the knee-joint, and while walking, the knee performed a peculiar rotatory motion outwards, which greatly retarded the patient's progress. These combined motions of the limb, together with the elevation of the foot, rendered it almost impossible for him to walk. He would frequently fall in the street, and after going a short distance, would suffer extreme pain in the foot and leg.

On the 11th of May, I applied to the outer side of the leg, the brass splint accurately moulded to the limb and the upper part of the external malleolus, extending from just below the knee to the last mentioned point.

After the application of this apparatus, the foot was drawn daily more and more toward the desired position, until, at the end of one week, it was brought into a direct line with the leg.

To fulfil the second indication—the flexion of the foot—the instrument represented in Fig. II was applied. The apparatus was secured to the leg and foot, and bound firmly at the instep by means of the strap, (*f.*) The point of the sandal and the upper extremity of the splint at the knee, approximated daily by the aid of the two lateral straps connecting those points, until the twenty-first day after the second instrument was applied, when the foot was restored to its proper position.

After the first few days the patient was able to begin to walk, which accelerated the flexion.

The pain produced by these instruments throughout the whole operation was by no means worth regarding. The process of restoration was slow but constant, and the changes brought about so gradual, that not even an unpleasant sensation was experienced beyond an hour, at any one time during the treatment. Not the slightest inconvenience was felt in any of the tendons, not even in the tendo Achillis during the treatment, but the pain was confined to the outer side of the foot during the abduction, and to the instep, during the flexion.

An abrasion of the skin took place and continued for a few days, being caused by frictions which were employed in aid of the treatment, but no such result was produced by the apparatus.

September 28th. There is still considerable rigidity in the instep. The motions of the foot are limited, and in walking, the rotatory motion of the knee is apparent, It is expected that support for the knee and continued exercise of the foot, will in time overcome these difficulties.

The condition of the foot, thirty days after the application of the first instrument, is shown in Fig. VIII.

This patient was seen, at different stages of the treatment by Professor George McClellan, Drs. E. W. Leach of Boston, Baldwin of Georgia, and Drs. R. Coates, Brewer, and West, of this city.

Case IV. *Greatly Distorted Foot, from exposure, which commenced in early life, restored in fifty-one days, by mechanical means alone.* —In the spring of 1840, my attention was called to Julia Dunmore, who was standing upon her crutches and on one foot, resting herself. The patient is now fourteen and a half years old, healthy, and as active as could possibly be expected, with the deformity under which she labors. She was a remarkably healthy and unusually active child—walked readily when nine months old—but at the age of a year and a half, she entirely lost the use of her limbs from exposure in a damp cellar, was placed under medical treatment, and recovered the motion of her extremities except that of her right foot, so far as to be able to walk in six months, with the aid of one crutch. She retained this power for some time, when it was observed that the hip was enlarging, and the leg growing shorter. A second crutch was then obtained, and the patient began to place the foot to the ground. The ankle was still however weak, but she continued to rest upon this as well as on the opposite leg, in walking. The ankle continued giving way, until the foot was brought to the position seen in Fig. IX, and thus she remained when she came under my care.

The whole limb was at that period much emaciated, measuring only five inches in circumference at the ankle, six and a half at the knee, and eight inches at the largest circumference of the thigh. The hip, and in fact the right side of the body, partook of the general emaciation.

She could stand, but she could not walk without her crutches, and she was so feeble in her limbs, that when she fell, she was compelled to crawl upon her knees, until she met with something by which she could raise herself up. The use of the limb produced great fatigue in it.

It would seem almost impossible that a greater deformity, or one more difficult of restoration, could exist, than is here shown. The foot was completely reversed. The patient rested the limb on the instep, which had been so long accustomed to pressure, that an enormous cushion (see Fig. IX, *a.*) had been formed to protect the foot from the ill-directed pressure.

In the treatment of this case, the same principles were to be applied as in the foregoing. The foot was first to be brought to the same axis with the leg, after which, flexion was to be made.

Accordingly, on Saturday, the 22d of May, 1840, I applied the brass splint to the outer side of the leg, as described in the preceding case. By the aid of the strap around the foot, I drew it daily nearer the line with the leg, until the tenth day, when it was made to assume the position seen in Fig. X.

On Monday, June 15th, I commenced flexion, and succeeded at the end of fifty-one days, in bringing the foot to the position seen in Fig. XI.

The entire restitution of the natural position of this foot, was accomplished perhaps with less difficulty than would be presumed by observing it in its

distorted state. This was owing to the relaxation of the ligaments, and the ease with which the bones moved upon each other.

Fig. IX.

Fig. X.

In the restoration of the foot, the pain experienced was comparatively little. In both rotation and flexion of the foot, this sensation was principally confined to the osseous structure.

With some effort this patient could bring her heel to the floor on the 10th of July, and on the 13th she began walking for the first time, and on the 30th the foot exhibited the appearance seen in Fig. XI.

That part of the foot on which it rested during the greatest degree of deformity, is now seen at *a*.

Fig. XI.

By reference to this figure it will be observed, that the leg is thrown slightly backward upon the foot, in consequence of a loss of proper action in the tarsus. This action the patient will again recover.

This patient has been seen by Drs. R. Coates, West, and Brewer; Drs. E. W. Leach of Boston, and Baldwin of Georgia.

Note.—*October 17th*, 1840. This patient has gained the use of her foot at the instep, and the leg is thrown forward to the proper position. She can walk several squares without much fatigue, and the general appearance of the foot is much improved from that seen in Fig. XI. She was examined by my class on the 15th inst.

Case V.—*Everted Deformed Foot; deformity commenced at two years of age, from paralysis; restored in ninety days by mechanical means.*—During the month of February 1840, Professors George and Samuel McClellan referred to my care Mr. J. B., aged 25 years, who was labouring under an everted deformed foot, as seen in Fig. XII, the history of which as given by the gentleman himself and his parents is as follows:

He was a healthy, fat child, and walked readily at nine months old. At two years of age he was suddenly seized with paralysis of the lower extremities, and spasm of the muscles of the back of the neck: his head was drawn far backward, and remained immovable for several weeks. He could not walk or sit without support, and both legs became entirely useless. This state of things was followed by several months of severe illness, when the left limb gradually recovered. At three and a half years of age he could climb up by a chair. At eight years old he could walk a short distance by the aid of two crutches, and continued in this situation for eight or ten years. He then walked four or five years with a crutch and a cane, and afterwards with a cane only.

Neither of his ankles had entirely recovered from paralysis when he began to bear his weight upon his feet; and as his general health improved, enabling him to take more exercise, his ankles, particularly the right one, gradually gave way, and assumed the appearance represented in the figure referred to.

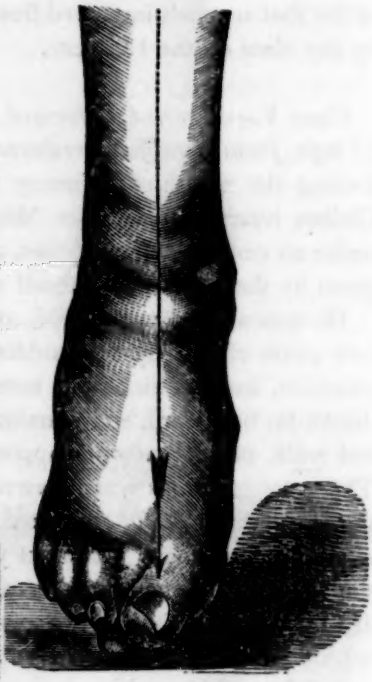
The internal malleolus was very prominent, the bones of the instep rigid, the foot attenuated, and the leg and thigh much smaller than those of the opposite side. The left foot was also slightly everted. He had no control over his toes. In walking, the foot was thrown outward, resting upon the inner edge, and the internal malleolus came nearly to the ground. He suffered much pain in the ankle and leg in walking.

By considerable effort the foot could be brought inward nearly on a line with the leg, and in order to retain it permanently, a firm gaiter-boot was fitted to the foot and ankle. Two plates of steel were provided, three quarters of an inch wide, two lines in thickness, and attached at their upper extremities by means of a semicircular plate, designed to pass behind the leg near the knee. These were long enough to extend from the knee along each side of the leg to the bottom of the boot, beneath which they were bent and united by their extremities. Attached to the inner plate at the

internal malleolus was a circular piece of steel plate three inches in diameter, about two lines in thickness at the circumference, and one-fourth of an inch at the centre. The whole being suitably padded was applied to the foot, and confined by straps passing round the leg.

Fig. XII.

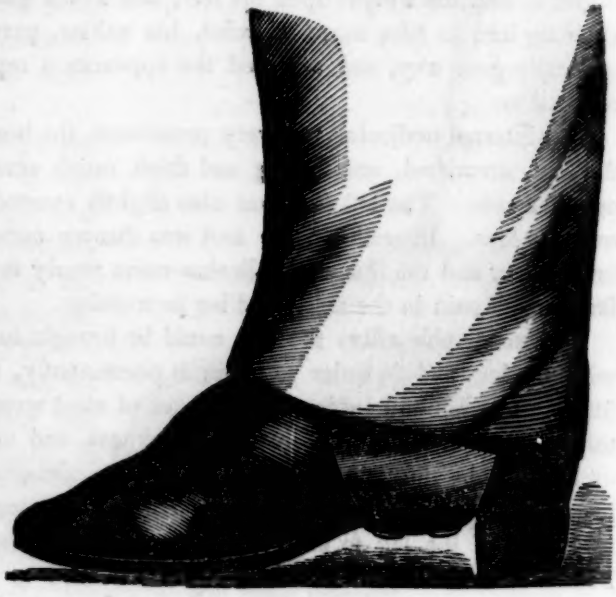
Fig. XIII.



This boot and its appendages were worn for ninety days, when the foot assumed the position seen in Fig. XIII.

The pressure at the internal malleolus by the circular steel plate was quite firm, and produced considerable pain in walking for the first few weeks. The rigidity of the ankle-bones limited the flexion of the foot for some time after it was brought to a line with the leg.

Fig. XIV.



At this period, Sept. 8th, the patient begins to enjoy the motions of the leg on the foot, and also to move his toes; the leg has increased one-fourth in size since the commencement of the treatment, and he is able to walk without any support, and without fatigue.

Drs. Bacon, Woodward, Smith, Morgan, Cogswell, and Ives of New England, are familiar with this case, and Professors Tully and Knight have examined the patient since his foot was restored—also the gentlemen who kindly referred him to my care.

I have several patients under treatment for the cure of false anchylosis of the knee-joint, with different degrees of flexion. Three cases have been perfectly restored. Some of these deformities are of many years' standing. The results we propose to relate in a future number of this Journal.

ART. VI.—*On Laceration of the Perinæum during Labour.* By WILLIAM M. FAHNESTOCK, M.D., of Bordentown, N. J.

THERE are but few accidents that befall the parturient woman, more untoward, than laceration of the perinæum, and there is scarcely one which has received less attention from writers on obstetrics. Mauriceau, Baudelocque, Hamilton, Ramsbotham, Gooch, Velpeau, Bard, Dewees, Ryan, Meigs and many other prominent authors in this department of medicine, give it, while treating on the natural process of labor, merely a passing notice, and that confined more to precautionary admonitions than to directing attention to remedial resources, when it has taken place; while Merriman, Denman, Burns and Davis, though they indicate a few more curative measures than the writers just named, despatch it with a page or two of hurried remarks.

This silence on so important a subject can only be ascribed to the general impression, that the accident is of very rare occurrence. It may be so in the practice of judicious accoucheurs—for Dr. Dewees informed the writer, a few years since, that he had to contend with but one case, happening to himself, in his extensive practice; which he attributes solely to the patient attention he always bestowed in supporting the perinæum during the expulsion of the child through the os externum;—yet, such is the nature of things that, in some cases, with the best management, laceration of the perinæum is unavoidable. That this accident does not more frequently take place is surprising. Dupuytren justly remarks:—"To my mind the wonder is, not that it should occur sometimes, but that it should happen so seldom. Whoever has witnessed first labours, in which the vulva has so much difficulty in dilating, and the perinæum so much exposed

to become excessively stretched, must have felt some apprehension lest the head should burst through it. I am convinced that this passing of the head by the perinæum is not so rare as experience would seem to show, merely because the commissura vaginalis being ruptured, the accident receives the name of laceration of the fourchette;" and Roux says: "Partial laceration of the perinæum is an accident of very frequent occurrence in women who have borne children." It does occur frequently, we are satisfied, in general practice, from a very reprehensible neglect of the perinæum and the preposterous attempts of the midwife to dilate the vulva, with rude efforts, to assist a speedy expulsion of the child, either from impatience or an anxiety to deliver the woman from her suffering.

Our attention was directed to this subject by a case occurring in our own practice, eight years since, and the only one which has happened to ourselves in a practice of eighteen years—our experience in these cases being derived mostly from calls to women who had been attended by midwives; and which exemption we assign to the very earnest admonitions of our kind and distinguished friend Dr. Dewees, in setting out in business; which restrained every hasty and undue effort to effect delivery, and kept our attention ever watchful of the distension of the perinæal tumour; and particularly when it had arrived at its greatest stretch: at which period there is such a propensity to seize the head of the child with both hands, and present, to the anxious mother, the trophy of our dexterity.

The subject of the case just alluded to, was a very delicate lady, twenty-seven years of age, in her first labour, and who had fifteen months previously miscarried, at the fourth month of her pregnancy. She had been suffering under debility, from recent severe indisposition, accompanied by preternatural excitement of the general system, and attended with anasarca and constant disposition of the uterus to throw off its contents. On the 28th day of June, 1832, she was attacked with diarrhœa, which required bloodletting and other prompt remedies, as the violence of the pains threatened premature delivery. She was within three weeks of her full period, and on examination per vaginam, revealed a very relaxed os tincæ, with the mouth dilated to the size of a half dollar. The succeeding night the patient rested well, free from pain or uneasiness of any moment. But at nine o'clock next morning, (June 30th,) labour pains came on suddenly, with fearful rapidity, and before the bed could be prepared, the membranes protruded through the os externum, and the head forcibly distended the perinæum. In less than one hour from the commencement of the labour, the child was forced through the recto-vaginal septum, and in despite of all our efforts to obviate it by the most indefatigable attention to giving support to the perinæum and to relax the parts. Every measure failed to excite the usual sympathetic action or enlargement of the external parts; and what is still more singular, they continued without any tumefaction even after the accident.

Formerly we were disposed to consider the occurrence of this accident as the result of culpable negligence on the part of the attendant, but we are now satisfied that it is sometimes unavoidable. In this position we are sustained by the experience of M.M. Courtney, and Evrat, and Mad. Lachapelle; but more frequently it occurs from ignorance of the danger, and the want of proper attention on the part of the accoucheur; and we strongly suspect that it often happens when the attendant himself is not aware of it, from frequently finding traces of this accident in females in subsequent labours. On making inquiry of these patients, we have learned that it had not been communicated to the attendant; they having supposed, as many women, and particularly young women, in their first confinement, do, that it is a necessary consequence. Further, we have reason to believe, that when not extensive, it often occurs without being suspected by the patients themselves, and they do not complain of any thing but a little soreness, which is borne as inevitable. Dupuytren relates a case of a woman whose infant was delivered through an artificial aperture between the rectum and vagina—central rupture —without the mother ever suspecting the accident. This case was seen by MM. Baudelocque, Guersent, and Capuron; the latter of whom was sceptical, and maintained, that in every instance of central rupture, the child passes by the os externum; but the two former gentlemen and Dupuytren were satisfied of the delivery of the whole contents of the uterus—both child and placenta—through the rent, from the smallness and implasticity of the external organs. A case related by Denman may reconcile these conflicting opinions, in which he delivered the child, via naturalis, after the central rupture had taken place, by giving direction to the head with the palm of his hand through the vulva.

The extent of the injury varies greatly in different subjects, owing to the size of the child, the conformation of the bony and soft parts, the strength of the septum, the rigidity of the external organs, the force of the uterine contractions, &c., &c. It may sever the fourchette; and we are quite certain that this is frequently ruptured with all the greatest possible care; but as little or no inconvenience arises from this slight laceration, it does not require any particular attention. It may penetrate the septum, externally, between the vagina and rectum, half an inch, three quarters, an inch, or the whole extent to the sphincter of the anus; it may divide the sphincter ani, and continue up the rectum to the coccyx, exposing all the contents of the pelvis. The rupture of the sphincter ani presents an important and formidable feature in this injury, rendering it much more serious and difficult of cure. It may rupture the internal wall between the vagina and rectum without communicating externally; it may tear through this partition externally downward to the verge of the anus, leaving the sphincter ani entire; it may again be rent in the septum without extending to either the anus or os externum: and although this has been stoutly questioned, M. Moreau

states that there are forty cases of this strange accident on record. The cases just alluded to above by Denman and Dupuytren are confirmative on this point.

In the case which occurred to ourselves, the accident was owing to a relaxed and greatly dilated os tincæ before labour came on; a pelvis capacious at the superior strait, admitting of an easy and rapid descent of the child; and having exceedingly small and unyielding external parts; which did not take on the sympathy of dilatation and had not the strength to resist the forcible contractions of a powerful uterus.

Another operating influence in the production of similar cases, we think, may be found in the too early departure of the chin from the breast of the child; which is pointed out by our most observant accoucheurs as a cause of preternatural labours, retarding very much the delivery of the child, and throwing much stress on the perinæum. We had a case quite recently, which presented all the apprehensions of such a frightful termination.

The patient was a young woman in her first labour, which was very rapid, the membranes having burst and the head at the inferior strait when we arrived at the bed side. On touching first, we found as we thought, the head about escaping, two inches in diameter of the vertex just emerging between the distended vulvæ; but upon a more careful examinatton, we discovered that the os externum was mounted up towards the symphysis pubis and that the forehead of the child was presenting through the dilated anus—dilated to the great extent just mentioned. Here was an alarming state of things, to one impressed with the horrors of this accident; and a few minutes more under the very propelling contractions of the uterus would have revealed a terrific laceration, extending, most probably, from the rectum to the vagina. We lost no time in introducing two fingers of the left hand to elevate the forehead, and using the forefinger of the other hand in imitation of Roonhuysen's lever, brought down the vertex, and then, supporting firmly, the perinæum with the left hand, the child was delivered safely, and the mother saved from so lamentable a misfortune. Velpeau thinks that laceration of the perinæum is most apt to occur in the fourth and fifth presentations of Bandelocque, when they cannot be converted into the first and second; in which the perinæum is put much more on the stretch than in any other presentation of the head.

The too early departure of the chin of the child from the breast, could not well present but in a very capacious pelvis, so as to admit the vertex to engage under the symphysis pubis, and then without making much progress, the chin departing rapidly from the breast and describing the arc of its circle in advance of the vertex. We have rarely met with this condition: but it may be the frequent cause of those very extensive ruptures in this part which we find occasionally recorded, as having required immediate and extensive sutures to keep the lacerated surfaces in apposition. Most writers attribute the accident to a small pelvis and narrow perinæum; we,

however, are disposed to ascribe it generally, to rigidity of the recto-vaginal septum and implasticity of the vulvæ.

The evil *consequences* arising from this accident are manifold and sometimes of serious tendency; the principal are, 1. Want of support to the contents of the pelvis. When the recto-vaginal septum is ruptured so as to extend to the sacro-coccygeal wall, the uterus sinks and presents the worst form of procedencia; entailing the most insupportable sufferings, and connected, as it generally is, with inability to retain the fæces, render existence almost intolerable. 2. The great obstruction it presents in subsequent labours: the hardened and unyielding cicatrices acting as bands, prevent the descent of the head of the child, and interfere with the dilatation of the surrounding parts, without which the child cannot be born, save at the expense of extensive laceration. 3. The constitutional irritation sometimes excited by injuries and ligatures in this part, produces distressing symptoms in many distant organs.

The *treatment* of this accident is very simple in the commencement, but should we fail to effect reunion, it then becomes very perplexing. In slight cases after having cleansed the wound, the treatment consists in simply placing the woman on her left side; securing the parts together with adhesive strips; covering the wound with Goulard's cerate and keeping the patient perfectly at rest by tying the limbs. This, however, is not sufficient in most cases that come under medical treatment. Often it will be advisable to apply emollient cataplasms immediately, to bring on suppuration and granulation as early as possible, without which being speedily effected, the laceration is very tardy in healing, and frequently very imperfect when it does take place. So soon as the tumefaction subsides, granulations form, and there appears to be a disposition to unite, the parts are to be drawn together with adhesive strips adapted to close the wound, and to be covered with thin spread unguentum saturni, and all to be supported by a T bandage, or what will sometimes be found to be still more useful an X bandage. The bowels must be kept in a soluble state by an appropriate diet, of which, rye-mush and molasses is the best, or mush made of unbolted wheaten flour; and the wound must be firmly supported between two fingers during every evacuation of either the rectum or bladder.

If this plan of treatment be adhered to rigidly, in a short time adhesion takes place. Frequently, however, new skin forms over the lacerated surfaces, which keeps it from uniting; then we have all the difficulty of the original accident, save the hæmorrhage to encounter. This must be guarded against most diligently from the commencement, but when it does occur, we have found the caustic—nitrate of silver—most efficacious in promoting restoration. It should be applied with much care—the sound flesh bordering on the wound up to the edge of the new skin, should be shielded from the caustic running over it, by a covering of adhesive strips, and the caustic should be used as dry as practicable. After the skin has been removed, the denuded

lips are to be brought into close apposition by adhesive strips, and secured with a T or X bandage, over pledgets of lint.

A writer in the *London Medical Repository and Review*, for May, 1828, says, that the mucous discharge which is constantly running over the breach of continuity, is the cause of these injuries being so very difficult to heal, and recommends, in such cases, that the patient be kept as much in the prone position as possible, and that a wide slip of lint, well smeared with balsam copaiba, be carefully placed over the whole of the laceration. Trainel introduced an ivory canula, surrounded with charpie steeped in balsam of Canada, into the vagina, to carry off the lochia and prevent the discharges from passing over the surface of the wound; and Dr. Davis proposes for this purpose a wooden tube of seven or eight inches in length, of sufficient diameter to admit of being charged with a long piece of sponge, which on being pretty firmly applied to the distilling orifices of the uterus, might be made to conduct every particle of secretion beyond the os externum.

Dupuytren, Dieffenbach and Roux recommend the use of stitches from the commencement; a practice we conceive exceedingly prejudicial to the ultimate welfare of the woman. It should be a dernier resort when every other expedient has failed.

We feel some delicacy in running counter to the opinions and practice of such high authority; but our convictions of truth and duty cannot be turned aside by the glare of commanding names; and particularly when the evil we apprehend, as resulting from it, is not seen in advance by the mere surgeon, as it seldom comes within his province, especially in Europe, where the three grand departments of medicine, physic, surgery and obstetrics, are kept so entirely distinct.

The objections to the suture in these parts are:—1. The irritation they sometimes extend to the whole system, as evinced in Roux's case, in which the patient died from phlebitis or purulent absorption after having had stitches inserted:—2. The transverse bridles they form, and the great obstacles they present to the distension of the perinæum in subsequent labours, which have been so great as to render it necessary for them to be divided by the knife before the child could be delivered. Ramsbotham mentions a striking case of this kind arising from the strong cicatrices following the restoration of a laceration sustained in a previous labour, in which he had to call on a surgeon to divide the cicatrix with a scalpel; and which case affords evidence of the general ignorance or blindness of surgeons to the sequences of these operations; for in this instance, the surgeon frankly acknowledged to Ramsbotham, when called upon to perform this office, his utter ignorance of obstetrical science, and his inability to determine any thing in regard to it; while at the same time, it shows the distinctive office of the surgeon and accoucheur, as Ramsbotham, though distinguished in his art, did not consider himself competent to undertake so trivial an operation as making a simple incision. An accident of this nature requires a surgeon who is an ac-

coucheur of experience, lest he inflict a permanent difficulty to remedy a present inconvenience. Roux, an advocate for the employment of ligatures, says:—"It has not certainly been studied by surgeons with that attention its importance requires." To Dr. Dewees is due the credit of the suggestion which has mitigated the severity of this condition of things, and overcome much of the danger of this alarming obstruction without resorting to the knife, namely, extensive bloodletting. This measure does not, however, entirely overcome the ultimate difficulty, as the same state may recur at every subsequent labour.

As ligatures may occasionally become absolutely necessary, either from the extent of the injury, which renders it impossible to keep the parts *in situ*, or from default of the *vis medicatrix naturæ* affecting reunion, we proceed to detail the different modes employed by the most distinguished operators.

That adopted by the earlier surgeons, was the common or interrupted suture. Most of the writers who advocate this method, acknowledge that in almost every case of any extent, the stitches slough away in the course of a few days, and leave the wound in a worse state than at first, as the ligatures have to be replaced in a highly inflamed surface. This has occurred frequently to our more recent advocates for this practice, by whom the ligatures have been revived; for Merriman tells us, that in his day, it was "sometimes the practice to bring the edges of the wound together by suture; but this has *seldom, if ever*, been attended with good effects; on the contrary the ligatures have been found to slough away, and the patient has, in consequence, *been left in a worse condition* than before. This mode of practice, therefore, is *discontinued.*" The same result of these operations is acknowledged by Saucerotte, Dupuytren, Dieffenbach and Roux.

Dupuytren prefers the *uninterrupted* suture: but independent of the great suppurating surface occasioned by the sloughing stitches, it must be attended by great destruction of the edges of the wound, and leave a serrated welt, which presents an insuperable barrier to distension in subsequent labours; a consideration always to be kept in view in these cases.

Noel suggested the *twisted*, or hare lip suture, and for some time it was preferred above the other modes; but it has disadvantages even over the common suture; and we do not find it any more successful than the others, even in the hands of Dieffenbach, who often resorts to both in the same case and at the same time. But in almost every case in which there was the slightest apology to justify their insertion, and in which he used both the *interrupted* and *twisted*, they tore out, at least partially, and left the wound, to a greater or less extent, ununited.

Roux has substituted the *quilled* suture, and reports much success, if leaving large, rounded, pouting cicatrices can be accounted success, in young married women still liable to conception and the accumulated horrors of childbirth to which it subjects them. It must be evident to every one who is practically conversant with this mode of closing wounds, that the lips of

the wound are apt to be everted by the pressure of the bodies placed under the stitches at the sides of the rent, which must add greatly to the welt in the cicatrix, and, subsequently, present an insurmountable obstacle to dilatation in succeeding labours. It has been proposed to superadd the *interrupted* suture to the *quilled*, to keep down the edges. It would scarcely require another duplicature of stitches to render the unfortunate woman's perinæum a complete lattice-work blind, and become as unyielding as the newest patented bridge for railroad viaducts.

Dr. Mettauer, of Virginia, relates an interesting case of ununited paturient laceration of the recto-vaginal septum, successfully treated with leaden ligatures, in the thirteenth volume of the first series of this Journal. He considers them "not only less irritating and less liable to cut out, when tightly drawn than any other material, but infinitely more convenient and effective in maintaining a uniform and perfect apposition, by the ready facility of simply twisting them; and without making any material encroachment upon the margins of the cleft."

Were we compelled to use a suture at all, we should employ the simplest —the interrupted—either of silk, flax thread or the leaden wire, and take the stitches sufficiently deep to hold the wound together for some days; but we honestly believe, that in almost every case the patient is better without them; and that in many instances, they are wantonly, uselessly and injuriously applied. It is admitted, generally, that so long as the sphincter ani is not torn, that nature is competent to the cure, and all that is required, is, that the patient be kept at rest, and the parts properly attended to daily; but the surgeons have an indomitable itching to dip in their needles on the most trivial occasions, as Dieffenbach acknowledges in the codicil of nine cases to his former essay, that he put *two twisted* sutures, at one dressing, in a laceration of the vulva of no greater extent than an *half inch:* while on the contrary Dr. Davis details a case of spontaneous cure, where a complete rupture of the sphincter ani had taken place; and remarks upon these operations, that "when adroitly performed and firmly connected, they have been known in *some rare* cases to succeed: whereas unquestionably, with the best care, they much more frequently fail, in consequence of the ligatures tearing their way out, and leaving the intermediate gap in a worse condition than before." Out of the nine cases just alluded to as having had sutures inserted, by Dieffenbach, *three* were too trifling to require an operation, *two* were from accidents not connected with the parturient state, but simple lacerated wounds; and of the remaining four, only *one* united kindly by the first intention, and the other *three* were found ununited after the removal of the stitches; and of the eleven operations reported by M. Roux, a copious suppurative discharge from the vagina, followed, in all, on the second or third day, and an uneasiness, more or less considerable, was experienced in voiding the urine. A cure was effected in *seven* by a single operation. In one the operation was unsuccessful the first time, but succeeded perfectly the

second time. *Two* of the patients *died*, one from the effects of phlebitis, or of purulent absorption; and the other, (in whom the laceration of the perinæum was complicated with prolapsus of the rectum and of the vagina,) from chronic enteritis, to which she had long been subject. In the remaining case, every thing went on favourably till the *fourteenth day*, when, after a sudden action of the bowels, the adhesion of the united surfaces gave way; a second operation was however *to be* performed.*

Where the rupture extends through the internal septum between the rectum and vagina without involving the sphincter ani, Sedillot proposes to divide the sphincter and establish a complete recto-vaginal fissure before the sutures are inserted: though from his remark on one of Saucerotte's cases we should not suppose that he thinks very highly of the suture, for here he says, that they were "not only of no use but rather to have retarded the process of cicatrization."

One of the principal impediments to success in the treatment by sutures, is the evacuations from the bowels which almost invariably tear away the stitches; and the strictest attention is enjoined to keep them quiescent as long as possible; for which purpose laudanum is freely given to induce and keep up constipation, as this movement whenever it does recur within four or five days after the insertion of the stitches, tears open afresh the ruptured surface and subjects the patient to endure a new series of ligatures, in this highly delicate and inflamed part. Saucerotte saw a case which was torn open, from this cause, on the *eleventh day* after the operation; and it occurred to one of Roux's cases, as we mentioned above, *fourteen days* after it had been stitched, even with the doubly secured *quilled* suture.

Several expedients have been devised to obviate this evil. Saucerotte proposes to introduce a canula of lead, surrounded with a piece of linen covered with balsam Peru, into the rectum, to carry off the contents of the bowels; but notwithstanding all this precaution, he found the stitches give way under the operation of an alvine discharge.

The great object to be attained with surgeons, by the introduction of ligatures, is to cause reunion of the divided sphincter ani, for the sole purpose of restraining the involuntary evacuations of the bowels; but a resort to stitches is not always necessary, as nature is adequate to remedy even this when left to her own operations: which she accomplishes by forming a valve when the sphincter ani does not unite perfectly. "MM. Petit and Gardien," says Burns, "notice the fact that the stools may ultimately come to be retained, but do not seem to be aware that this depends on the formation of a valve. They think it owing to the sphincter regaining its power." To overcome this loathsome state of things until the sphincter regains power, or nature supplies a substitute, Gooch recommends "a truss composed of a circular band of steel which goes round the body just above the

* Medico-Chirurgical Review.

hips; from behind a piece of steel somewhat elastic, and so fixed as to admit of being moved to either side, and incurvates forward between the nates, and then turns a little upwards. At the end of this piece of steel is an ivory ball, on which is placed a sponge sufficiently large to cover the vulvæ, perinæum and anus: when the patients evacuate the bowels they have only to turn it aside."

Young practitioners must be cautioned not to be over anxious to do too much in these cases; for it sometimes happens, that from a great desire to make a perfect restoration of the parts, they may unite it so far as to require another operation, to open it again with the knife, to enable the patient to exercise the legitimate gratifications of the married bed. This happened once to one of the most distinguished physicians of our country, who had to dilate the part with a scalpel; and Dupuytren confesses that it occurred to one of his patients, upon whom he had operated, for this accident, with the interrupted suture, which united so firmly that sometime afterward the woman and her newly married husband applied to him for relief from this embargo on their matrimonial privileges. This may occur readily, though it would scarcely be suspected, the operator not imagining that the cicatrix would extend any further than the wound, and leave the vulva in the original state. It does not, certainly, extend any further than the wounded surfaces, but during the process of adhesion there is a great retraction of the parts with a drawing in of the labia, which contracts very much the entrance of the vagina. The rule to be observed in these cases, is to stop and be satisfied with the union so soon as there is adhesion sufficient to support the contents of the pelvis: for retraction of the parts continues to take place after the adhesive process is fully accomplished.

There is not a case requiring medical attention in which the trite adage is more truly verified than in this accident—an ounce of prevention is better than a pound of cure:—and this position has been, at all times, justly appreciated by those alive to the result; and many efforts have been made to restrain its occurence which it may be proper, *en passant*, to bring to the notice of the reader. Mesnard thought it was only necessary to push the coccyx backward to prevent it, or to insert two fingers between the head of the child and the perinæum, when the head arrives at the vulva. The first is impracticable, in many cases, as the coccyx is sometimes very inflexible; and the second, we apprehend, would only add to the difficulty by increasing the volume which forces fearfully the already over-distended perinæum. The author of the *London Practice of Midwifery*, attributes the accident to the voluntary efforts of the woman in aiding the expulsion of the child, and thinks, that if she could be restrained, it might be avoided;—yea, that if we could only divert her attention so much as "keep her talking, or even to count twenty, she is perfectly free from the danger of breaking her perinæum!!!" Flamant proposes to take hold of the skin of the buttock or poste-

rior part of the pelvis with both hands and draw it forward as much as possible, to relieve the distension of the perinæum, just at the period of the birth of the child. Merriman admonishes the attendant "carefully to abstain from hurrying the head through the os externum, to avoid irritating the vagina and inner membrane of the pudendum, to guard against removing the mucous discharge naturally secreted for moistening the passage; occasionally to introduce lard or tallow to moisten and soften the parts when they feel dry and harsh or heated, and to employ mucilaginous injections; and to keep the hand, covered with a soft napkin, against the perinæum, so as to afford a regular and equal support to the parts during the passage of the head." By vigilant attention to the precautions of the latter writer, most women, under very unfavourable circumstances may be conducted safely through their travail, and be saved the great misery this accident inflicts upon the devoted victim.

When called to a case of labour where there has been a laceration of this kind, which can be readily detected by the absence of the fourchette and the presence of a large cicatrix, and transverse bands from the sutures, acting as bridles, we should lose no time in preparing for the difficulty we shall have to encounter; and in addition to the foregoing suggestions we should use, incessantly, emollient fomentations and relaxing cataplasms—of which the leaves of the stramonium or extract of belladonna, may answer a good purpose, though we have not had an opportunity of trying them. However, these articles may answer or fail, after the cataplasms of *althæ* or *ulmus* have softened the parts in some measure, then warm lard is to be repeatedly applied externally and within the vulvæ, until we find the parts distending gently: but the most prominent and efficient remedy is prompt and copious bloodletting, which produces more relaxation than can be effected by any measure; but which should not induce the attendant to omit the employment of other valuable adjuvants.

Bordentown, N. J., *October 26th*, 1840.

Art. VII.—*Experiments in the Revaccination of Children with New Virus.*

By T. S Kirkbride, M. D. of Philadelphia.

Small-pox and varioloid disease having been unusually prevalent in this city and its suburbs, during the past spring, I was induced, while attending two of our public charities to revaccinate the inmates of those institutions.

The number subjected to the experiment is much smaller than I could have desired—still the results may not be void of interest. Two hundred and nine children were revaccinated, upon some part of whose limbs, a perfectly formed, rounded, stellated, or punctated cicatrix was found. All others,

upon whom this indication of previous vaccination was not discovered, are excluded from this report.*

Of the total number, one hundred and thirty-four were boys, and seventy-five were girls; and the average ages about twelve years, the extremes being six, and twenty. The *virus* used was eighteen and nineteen removes from the cow, being derived from that forwarded by Mr. Estlin and Dr. Carpenter, of Bristol, England, to Professor Dunglison, of this city, near the end of 1838, and from which source of supply, a large number have been vaccinated by the vaccine physicians and private practitioners of Philadelphia. The dry scab was employed in every instance. A portion of it being softened to the proper consistence was placed upon the raw *cutis*, which had been exposed to a small extent, by abrasion of the cuticle with a dull and round pointed lancet; a few crosses with the same instrument, but rarely sufficient to produce a drop of blood, completing the operation—a plan, which, in primary vaccination, we have rarely found to fail. These scabs were taken from the arms of healthy children under one year, except a small portion from an individual thirteen years of age.

Of the two hundred and nine children with perfect cicatrices, forty-four, or rather more than twenty-one per cent. had the disease perfectly—presenting precisely the same characteristics which I have observed from the use of the new virus in primary vaccination. The proportion of successful cases did not differ in the two sexes. It is also proper to remark that in several cases there were vesicles upon the arm which ran an irregular course, i. e., there was slight phlegmonous inflammation—but all such are rejected from the report.

Three of the cases had sloughing of the arm which left ulcers that were

* The subjects of this experiment were the inmates of the "House of Refuge," and the pupils of the "Pennsylvania Institution for the Instruction of the Blind."

The Refuge is an asylum for children who have just commenced a career of crime; for those deserted by their natural protectors, or for such as cannot be restrained by parental authority. Not a place of punishment, but a school for the reformation of bad habits, and the inculcation of good ones; improving the physical health, and cultivating the mind, by constant occupation, strict discipline, and a well-regulated regimen. It may be considered an appropriate part of the mild Pennsylvania penal system, whose grand object is reformation, and the prevention of crime, rather than its punishment. A very large part of these children are orphans, and nearly all so much neglected by their parents, such outcasts upon society, that little can be learned with certainty of their previous history or diseases, and on this account, the one test of previous vaccination (the cicatrix) was all we had to depend upon. Although the pupils of the Institution for the Blind differ totally in character from the inmates of the Refuge, still the same obscurity exists respecting early incidents in the lives of many, who have been rescued from a state of neglect and destitution by benevolent individuals, who had seen how practicable it was to instruct this unfortunate class in literature and some of the arts, and to make them worthy members of society.

several weeks in healing. Of these three, one was in bad, the others in perfect health.

Although some members of the profession appear disposed to reject the new virus, from the severity of the symptoms which it induces; yet, except in the three cases just referred to, we have never seen sloughing or other unpleasant effects. It does certainly produce more decided symptoms than the virus which has been in general use for years past; it is slower in its progress to maturity; the inflammation is generally greater with more constitutional disturbance; the scab is much later in falling off, and adheres strongly in its central point—conforming in a great measure to the first observations made by Dr. Bridges, of this city.* My own observations induce me to put more confidence in its prophylactic powers than in the old virus, although this point can only be settled by time, and an enlarged experience by the profession generally.

To test the virus obtained from revaccination, I used part of a scab in about twenty of the cases embraced in this report, and subsequently in children who had never had the vaccine disease, and with the same success as from crusts derived from primary vaccination. It was this scab that was alluded to in a previous part of the paper as having been derived from an individual thirteen years of age.

The recent lymph so generally adopted for vaccination in Great Britain, and on the Continent, is here rarely used—while the dry scab, which is spoken of in some reports on revaccination as nearly always failing, is, we believe, in this country almost universally employed.

In none of my cases, was more than one vesicle observed in those subjected to revaccination.

Two or three took the vaccine who were said to have had small-pox in infancy; but from the character of the children given in a previous note, there may be some doubt on this point. Of ten thoroughly scarred from that disease, no one was affected by the vaccination. In five children who had no cicatrices, and who had been several times vaccinated unsuccessfully with the old virus, there was no appearance of a vesicle.

My friend, Dr. Pepper, assisted me in a number of the cases at the Refuge, and observed the results in all.

I regret that other engagements prevented my repeating the experiment in those cases that failed in the first instance.

PHILADELPHIA, *October 7th*, 1840.

* American Med. Intelligence, vol. ii, p. 303.

ART. VIII.—*On the Influence of Coffee over the narcotic effects of Morphia.* By BLANCHARD FOSGATE, M. D. of Auburn, New York.

To relieve myself of a severe attack of toothache, I took one ounce of a solution, in which the sulphate of morphia amounted to one and one-fourth grains—equal to about seven and one half grains of solid opium.

When this dose was exhibited, there had been no food or drink taken into the stomach for eighteen hours, which was in a very empty condition. The absorbents being ready for action, this small quantity of fluid was quickly taken up and distributed to the system. In about twenty minutes the dental pain subsided.

It will be necessary to remark that I am not in the habit of using opium in any form, but have, on previous occasions found two drachms of the above solution sufficient to produce sleep.

After the lapse of half an hour, symptoms indicative of the constitutional effect of the remedy began to manifest themselves;—first, in a sensation of thickening and stiffening of the muscles of the back of the neck, which soon extended to the flexor muscles of all the limbs, and which continued until the morbid action was broken in upon. This was not a condition of rigidity such as obtains in cramps, but subject to volition, and was rather of that feeling that we imagine would be experienced in a paroxysm of catalepsy, could the patient be made sensible of the movements of his limbs.

At this time (five hours after it had been taken,) great nausea supervened, and many efforts to vomit ensued, without, however, ejecting much more than the natural secretions of the stomach—twenty-three hours having elapsed since the introduction of any kind of food or drink into this organ.

These effects of the narcotic which were continually increasing, created an apprehension of danger, and I determined to relieve myself by distending the stomach with warm tea, and to allow the muscular contraction already induced, to expel it, thereby expecting relief from the prostrating sensation of nausea which had become very severe. The tea was no sooner swallowed than thrown up, and an almost unconquerable loathing was created at any remedy the mind could suggest. Drinking more tea was attempted two or three times with the same result and abandoned—the symptoms increasing in severity.

Vegetable acids being recommended as antidotes to the poisonous effects of opium, sour cider, a little sweetened with loaf sugar was taken, and one mouthful would be ejected before a second could be swallowed. This immediately produced an additional symptom, being one apparently of permanent contraction of the stomach, accompanied with distressing nausea, but no pain. It was a sensation, if I may so express myself, of determination on the part of the organ to resist the further introduction of any thing.

These trials having failed, coffee was proposed, and an hour elapsed before it could be prepared. During this interval, the severity of the symptoms became more intense, and a considerable degree of prostration and apathy were added to the already accumulated influence of the narcotic. The circulation was full but slow, and considerable pricking of the skin felt at this time. One gill of *cold* strong coffee was swallowed, accompanied with the same loathing as the former prescriptions, was retained about five minutes and ejected. With this, the whole character of the symptoms changed—the loathing abated—the nausea in part subsided, and that peculiar sensation of contraction relaxed its hold, and submitted as to a charm. The coffee was repeated several times during the night, at each trial grea improvement being manifested in the symptoms, and eventually it effected the cure.

Subsequent to the commencement of the nausea and previous to the exhibition of the coffee, my mind was depressed, and considerable anxiety pervaded it, but it was at the same time restrained to a consideration of the condition of my system, and no pleasurable sensations had been experienced. The coffee, however, soon raised this weight of oppression, and, I may add, also the controlling power of reason, and in their stead, fancy in her wildest range roved on through scenes of rapture and of splendor, which the mind of the patient, unassisted by such powerful influences, is utterly incapable of attaining.

This delightful revelling of the imagination continued five or six hours, and, during this interval, my attendants, who spoke to me several times, could not determine whether I was asleep or not;—neither can I settle the question myself; for, if asleep, I awoke so easily that the transition could not be perceived. But I am conscious that this state of mental delirium ended in a sound sleep which was succeeded by a few hours of lassitude.

It will be remembered, that in this case, the morphia was taken after a fast of eighteen hours, in liquid form, and when the absorbents were in a condition to distribute it to the system with as much rapidity as their function would admit. If it had been solid opium taken in place of fluid morphia, the effect would have been less rapid, and probably more permanent, and the remedy could not have been brought to act with such precision until after the whole of the substance had been disposed of either by ejection or absorption, when I think a strong extract of coffee administered cold, and in small and repeated draughts would have a decidedly beneficial influence over the poisonous effects of this drug.

The counter tendency of the coffee, so rapid in its remedial effects, was owing in a great measure to the inanition of the stomach which had been increased by an additional fast of five hours. This must have rendered the absorbents still more eager in their functional operation, and which brought the influence of the coffee to bear with such power upon the cause of derangement.

The coffee was administered cold with a view to prevent emesis—very strong, and in small quantity. The effect produced was almost immediate and radical. The *modus operandi* is left a subject for further investigation.

The phenomena which were presented while the system was under the influence of the narcotic were unusual, and they can only be accounted for by reference to the strange anomalies to which the nervous system is sometimes subject.

The view I have taken of this subject has led me to believe that there is a principle in the coffee bean that will, when thoroughly understood and correctly applied, go far towards disarming opium of many of its fearful effects.

There is another fact worthy of consideration, that both the influence of the morphia and coffee are observed upon a person in good health, and unaccustomed to the habitual use of either. This may possibly furnish some data for their therapeutical application.

It is a record of oriental history, that to those persons who use opium as a means of intoxication, coffee is the most highly valued beverage. This they drink strongly concentrated and unmixed after their habitual debauch of opium eating. It has been a common practice, from time immemorial, and the source of its celebrity depends upon the circumstance of its dissipating the lingering effects of their favourite indulgence. This well established fact in connection with the remedial agency it exerted in the foregoing case, brings me to the conclusion, that a further investigation of this subject will result in much useful knowledge.

ART. IX.—*On a Form of Sore Mouth peculiar to Nursing Women.* By FREDERICK F. BACKUS, M. D., of Rochester, New York. (Communicated in a letter to Dr. Henry Bond of Philadelphia.)

DURING a practice of 24 years in this city, I have every year met with many cases of a *sore mouth*, which is, without any doubt, peculiar to *nursing women*. It has been much more obstinate in its character, during some seasons, than others, although it is always a very troublesome complaint; to the patient one of great suffering, to the physician one of much perplexity. Why it should be more obstinate some seasons, I have never been able to discover, but such has been my experience. This complaint frequently shows itself during the last months of gestation, and oftentimes a course of medicine *then* adopted and carefully pursued, prevents a *severe* attack of it after confinement. When occurring after confinement, as it most usually does, it makes its appearance at different periods in different individuals, sometimes appearing within the week, and onward from that time to two,

three and six months. The accession of the disease is often very rapid from apparent health. It often, for instance, comes on violently in the evening, while during the day there had been no appearance of it, and the patient was well, and, it might be, actively engaged in household matters, had taken no unusual food into the stomach, and was not suffering from any unusual irregularity of the stomach or bowels. It comes on at other times gradually, with slight ulceration of the tongue or fauces, with a general soreness of the latter part following. *As to the subjects* of this peculiar sore mouth, it is, in the first place, confined to *females*, no *man* ever had it, or ever will. It attacks all classes of females who are *nursing*, or who have advanced to the *latter months of pregnancy*, and none others. As to the general health of the subjects of it, I may say that no class of females are exempt from it. I have very often seen it in those of the most robust constitutions, who have ever enjoyed good health, and who have never been dyspeptic, or troubled with acidity of the stomach, or any other derangement of the alimentary canal. I think, however, that females of a leucophlegmatic temperament and of dyspeptic habits, with habitually *slow bowels*, are perhaps more liable to attacks of it than others. But none are exempted from it, no matter how fine their health. In the onset of the disease, it seems local, but after a continuance for months without permanent relief, I have no doubt the same morbid irritation, that exists upon the tongue and fauces, does affect the œsophagus, stomach and bowels generally; these are the cases that terminate fatally. But often as a *local* disease, it will resist an active, local and constitutional treatment for months without *permanent* relief, the appetite still remaining *good*, and the functions of the stomach and bowels in a normal state. The *children* of females labouring under this form of disease, are uniformly healthy and robust, as they are usually well supplied with food from the mother, as the secretion of milk is commonly *very large*, until in the last stages when, the patient becoming reduced by starvation, the milk fails.

Symptoms.—As I have before observed, the accession of the disease is often sudden, extremely so; in three hours time, after seeing your patient in health, you may find her with a scalded tongue and fauces, and unable to converse or take food. The first sensation of the patient, (referring to the tongue,) is that of *scalding*. They uniformly so describe it; the pain is often intense, like a severe scald. The colour of the tongue is very peculiar, being *pink*, the edges of the tongue and roof of the mouth have a deeper hue of this colour, accompanied with a most profuse watery discharge from the mouth, extremely hot, so much so as to give a scalding sensation to the face when passing over it. The appetite is usually very good, often ravenous, but no food or drinks except the blandest can be taken into the mouth without producing the most intense pain. The food must be of a mucilaginous or farinaceous character. After a continuance of this state of the mouth for a few weeks, there appear slight ulcerations on

the end or edges of the tongue, and about the fauces in different parts. Sometimes the disease commences with slight ulcerations on the end and edges of the tongue, and this general scalding of the tongue and fauces follows. The bowels are usually constipated, or soon become so; no fever, but oftentimes excessive irritation of the whole system, in consequence, probably, of the want of rest, as the continued pain of the fauces, and the excessive and constant flow of burning saliva, prevent any comfortable rest night or day; tongue always free from any coat.

Treatment.—I have, for the most part, treated the disease as arising from a vitiated state of the secretions of the stomach, kept up in some unknown manner, by the process of lactation; although in a great many cases I have had no reason to believe the stomach much disordered, for the patient three hours before might have been perfectly well. I formerly gave emetics, cathartics of calomel, or milder ones of blue pill, with local applications to the mouth; but this method very often failed; the disease, although mitigated for the moment, still went on more and more severely. I have used the bismuth and other metallic tonics following this course of medicine, without effect. About five years since I adopted a new method, which I have found more efficacious than any I had before pursued. As soon as the first symptoms of the disease appeared, I made a free and continued use of the following pills. ℞. Carb. ferri, grs. lxv; pulv. rhei et gum. aloes āā grs. xxv; pulv. ipecac. et sap. Hispan. āā grs. xii. M. ft. mass. divid. in pill No. 50. Two of these should be taken twice or three times a day, or often enough to keep the bowels *very open*. I have always observed that an artificial diarrhœa produced by them usually affords almost immediate relief, and often during the continuance of the disease, a spontaneous diarrhœa from any cause, relieves the mouth at once. These pills, accompanied with an astringent wash of the black-berry root, or the marsh rosemary, or a weak solution of nitrate of silver seldom failed to afford relief, so that I promised myself I had found *the specific*. But latterly, some cases have resisted this and every other mode of treatment, and I have had to wean the child, when the disease was cured at once and did not return again.

It is a very singular disease. Why it should exist only during gestation and lactation, is the question. That such is the fact, however, no physician here doubts for a moment.

Rochester, *June*, 1840.

ART. X. *Case of Gun-shot Wound of the Hand, Fore Arm, and Arm, with Fracture of the Humerus, successfully treated.* By R. W. LINDSAY, M. D., of Alexandria, D. C.

L——— E———, ætat. 10, was wounded, April 11th, 1840, by the accidental discharge of a fowling piece, whilst holding it by the muzzle and drawing it towards him. The load entered the upper and thick part of the palm of the hand, slightly grazing the wrist for about an inch, then tearing up the muscles in the most shocking manner, half way up the fore-arm, exposing the tendons to view; it entered the arm anteriorly a few lines above the bend of the elbow, fracturing the os humeri about an inch and a half above the joint, then passing upwards, about half way up the arm, it made a slight opening posteriorly, but without any portion of the load apparently having made its exit.

On the first view, this case presented a very formidable appearance, and considering the situation of the wound in the arm, it appeared almost impossible that the brachial artery could have escaped very serious injury; but on examining the pulse, it was found to beat with the same force and regularity as in the sound arm, which showed, that if the artery was injured at all, it was not so seriously as to endanger sloughing and hæmorrhage.

Professor Gibson says, that in some cases, large arteries are pushed entirely to one side, without sustaining injury. On examining the course of the artery at the time, and since the wound healed, this must have taken place to some extent in the case under consideration.

On introducing the finger between the ends of the divided bones, there appeared to be simply a transverse fracture; no loose pieces of bone could be felt. The arm was now swelled to double the natural size, the pulse 110 in the minute, but regular, and, though reaction had completely taken place, there was nothing in the action of the pulse, or the general system that indicated venesection.

In consultation, five physicians being present, the following considerations were discussed: In the first place, mortification might take place in a day or two, and deprive the patient of the chance of amputation; the brachial artery might be so injured as to slough, and the patient run the risk of dying from hæmorrhage; the capsular ligament of the joint might be torn up, consequently greater danger to be apprehended from inflammation; tetanus might supervene, and in taking into view the extent of the injury, and the part wounded, this seemed a not unlikely occurrence. On the contrary, the patient was young and healthy, and no constitutional symptoms had occurred to induce the belief, that any important blood vessels or nerves had been seriously injured.

A majority were in favour of immediate amputation, but as there was a want of unanimity, it was determined to wait until a surgeon from Georgetown should arrive. When this occurred a more thorough examination took place, extension, and counter extension were made, which enabled us to examine the case more satisfactorily, and I now became fully convinced of the correctness of the opinion I had given in the first instance.

The patient passed a tolerable night, sleeping composedly for half an hour or an hour at a time, and in this way sleeping two thirds of the night: though when awake he seemed to suffer much from pain. The pulse continued at about 110, and regular, but did not at any time indicate the necessity of venesection.

In the morning a physician from Washington City arrived, and another consultation took place, which resulted in a determination to make an effort to save the arm.

Our attention was now turned to the dressing best adapted to the wounds, and to the general treatment. The patient had been placed in the recumbent position, the arm extended and laid on a pillow, and by this time the limb had become so painful, that the slightest motion created the most excruciating pain. Cold water dressings had been used, giving very marked relief. Pledgets of lint were applied, and kept constantly wet with cold water; and I would here observe that the effects of the cold water dressings were most remarkable. At frequent intervals the patient suffered severe pain, particularly when roused from a slumber, and in no instance did the cold water fail to give more or less relief, and had a most remarkable effect in tranquilizing and composing him.

In Florida, during the campaign of 1836, I had an opportunity of treating a great many cases of gun-shot wounds with the cold water dressings, but in no case were its beneficial effects more remarkable, than in the one under consideration, and I cannot too earnestly recommend this mode of treatment in the first stage of all gun-shot wounds.

Aperient medicines were administered, and the antiphlogistic system was strictly attended to, throughout the whole treatment.

The water dressings were continued three days, we then substituted emollient poultices in their place, the sloughing was considerable, and on the fifth or sixth day the wounds became fœtid: to correct this, we used the charcoal and carrot poultice, which in a few days had the desired effect.

The wounds were now suppurating, and in every respect in an improved condition, and were now dressed with cerate. The pulse during this time ranged from 100 to 115, but when the suppurative process was completely established there was an evident improvement, the pulse becoming less frequent, and the general system much improved, and every thing progressing favourably, even beyond our anticipations, At this stage of the case it became necessary to use tonics, and a more nutritious diet.

We likewise used the syrup of sarsaparilla, and from its beneficial effects on the general system, it had a happy tendency to facilitate the healing process.

After the suppurative process was established, shot from time to time were discharged, together with the wadding of the gun. The load, however, had taken different directions, and at some distance from the posterior openings, an evident fluctuation was felt; on opening it, matter was very freely discharged, and with a small scoop a number of shot were extracted.

The limb was now placed in a curved splint made of tin, extending the whole length of the arm and forearm; this gave better support to the limb, and enabled us to move and dress it with greater facility and ease to the patient.

At the end of three weeks the free discharge from the wounds was much abated. On measuring the arm, it was found to be at least an inch shorter than the sound one, extension and counter extension were necessary, which was effected by the use of the curved splint, it being first well lined with surgeon's lint, and then applied with a Scultetus' bandage. The bandages were applied the whole length of the arm and fore arm, and answered the object most effectually; as we anticipated the bones commenced uniting, and in about four weeks reunion was established.

It was now important to turn our attention to the elbow joint, there being danger that anchylosis might take place. To prevent this, a carved splint with a hinge at the elbow was used, which was first lined, and then applied with the common roller; to the upper part of the splint were attached two pieces of wire, the lower ends of the wires ending in hooks, which were hooked in holes in the lower portion of the splint, these holes were placed at intervals of an inch, and we were thus enabled by degrees to flex the arm. At this time the arm can be used freely and without any difficulty, from the extended position, to something more than a right angle. The muscular action of the arm is fast recovering, and will no doubt soon be restored. The arm is now of the natural size with the exception of the fractured portion, which is enlarged from the ossific matter thrown out in the reunion of the bones. A gradual absorption is going on, and at this time camphor liniment is used to excite the action of the absorbents to remove any extraneous matter that may exist about the joint, and which prevents its full motion. This, in time, there is little doubt will be effected, but as such a process must necessarily be slow, it may be some months before the arm is fully restored in every respect.

On no subject have the opinions of surgeons been more contradictory, than as to the propriety or impropriety of amputation, generally for the want of a full and and fair investigation. For instance, military surgeons have been accused of amputating very unnecessarily; but when we reflect that after an engagement, the wounded are hurried from place to place, and deprived, as they must be, of the requisite attention, their wounds not dressed for days

together; that consequently great pain and inflammation must necessarily follow, which may endanger or even sacrifice the patient—under these circumstances with a full view of the case before him, the prudent and experienced surgeon amputates on the field of action. But in domestic life, where every convenience and comfort can at once be afforded the patient, the case is very different. I hold it improper to amputate here, except where the prospect of saving the limb is most unfavourable; and in forming a decision in all cases, particularly those occuring in civil society, the peculiarities of constitution, the age, habits, &c., of the patient, should always be carefully taken into consideration.

ALEXANDRIA, D. C., *August*, 1840.

MONOGRAPH.

ART. XI.—*On the Causes and Treatment of Pseudarthrosis, and especially of that Form of it sometimes called Supernumerary Joint.* By EDWARD HARTSHORNE, A.M., M.D.

PSEUDARTHROSIS* (from ψευδης false, and αξδξον a joint,) may be defined to be a spurious, misplaced articulation instituted between bones or parts of bone; supervening, in the latter case, upon a fracture, and in the former on a dislocation. The first and more important species is presented in the seat of fracture of a broken bone, in which, at the proper epoch, there is still no consolidation. This is the *calli defectus* of the earlier writers; it consists either in the entire absence of callus, or in its improper distribution and defect of continuity from fragment to fragment. Such a condition presenting a point of motion in any part of a naturally unyielding bone, must obviously impair, if not destroy its function, and thus render the limb to which it may belong, proportionately useless. Béclard appropriately named this the supernumerary joint. (*Gén. Anat.* Trans. by Togno, p. 401.) The second form is the sequel of a neglected luxation. The joint is then created between the unreduced head of the dislocated bone, and the non-articulating surface of the bone and adjoining soft parts, with which its violent displacement has brought it into contact.

Of this kind also are the joints artificially produced by the celebrated operation of Dr. J. R. Barton, for the relief of anchylosis; and by White's operation for the resection of the diseased heads of bones.

The evidently vicarious nature of the second form of pseudarthrosis, as the only substitute for the previous natural articulation, has suggested the name, given also by Béclard, of supplementary joint. It possesses minor interest in most of its relations, and shall not occupy further attention in this paper. As a disease, it requires no treatment but such as will facilitate the completion of what is but a salutary change, intended to repair the loss of a congenital organ.

John Hunter,† Boyer,‡ and some others, made a verbal distinction of the pseudarthrosis succeeding fracture, into two varieties according to the anatomical characters. The simpler structure in which the ends of the bones were connected by a condensed cellular, or a fibro-cellular medium, was termed by them, ununited fracture, disunited fracture, unconsolidated fracture, &c., while they designated as genuine false joint, only the "accidental diarthrodial articulation," in which the extremities of the fragments were unconnected by any intervening substance, and merely held together by a loose and imperfect adventitious capsule.

* SYNONYMES. *False, Preternatural, Accidental,* and *Artificial joint; Fausse Articulation, Articulation Anormale, Accidentelle, contre nature, Falsche Gelenke.*

† Lectures on the Principles of Surgery, edited by Palmer, vol. i, p. 504.

‡ Malad. Chirurg. tome iii, sect. 4, art. iv.

Others, again, employ the terms ununited fracture, &c., alone; and comprehend by them both the irregular amphiarthrosis or flexible union, to which Hunter limited the meaning of these words; and the abnormal diarthrosis or bursal structure, which is, in reality, something more than a mere want of union in a fracture.

At present, the needless distinction of Hunter and others, is disregarded; and pseudarthrosis, false joint, and other terms of that class, are usually applied, in preference to the less logically accurate phrases, ununited fracture, &c., indifferently to every form and variety of the structural derangement. We propose to adopt the derivative at the head of this article, as the generic title of the lesion of which it treats; and to consider the two species, after Béclard, according to the primary affection, as supernumerary joint and supplementary joint.

In supernumerary joint may be recognised a significant expression for an infirmity which always creates more or less discomfort, and is often extremely distressing. If it be seated in one of the extremities, where, indeed, we most commonly find it, the limb is crippled, if not disabled, its muscles shrink from inaction, it is often shortened and crooked from displacement of the fragments, and an exuberant growth of irregular callus may increase the deformity. In this manner the part may become a useless, misshapen and unwieldy mass; sometimes so burthensome and even painful, as to render amputation itself a welcome alternative.

The calamity, however, is not always so deplorable. The character and position of the articulation may be such as but slightly to involve the use of the limb. This is more apt to occur in the upper extremity, where the lesion may occasionally exist without causing serious inconvenience. Mr. Syme has seen want of union both in fracture of the humerus and that of the fore-arm, in which the bones having been broken transversely, and the muscles being equally balanced, the limb, although it was quite flexible at the injured part, yet in a state of repose it could execute every exertion it was called upon to perform. (*Clinical Reports*, by Professor Syme, *Edin. Med. and Surg. Journ.* July, 1835.) Velpeau quotes instances of this, also one of a femur reported by M. Yvan as unattended with the usual loss of power. (*Méd. Opératoire*, tome ii, p. 582, 1839.) M. Cloquet gives an account of an individual, the upper third of whose humerus had been long destroyed without the voluntary motion of the arm being prevented. A man died in the Pennsylvania Hospital a year or two ago, in whose fore-arm there had existed a supernumerary joint of the radius for 35 years, without interfering with the active pursuit of his vocation, which was, to ply the needle as a tailor.*

Happily, fractures in general unite with so much facility and certainty, that, notwithstanding their great frequency, the untoward result of their failure to heal is comparatively rare. Only 13 cases† have been admitted into the wards of the Pennsylvania Hospital since the year 1829, and only one case of confirmed supernumerary joint has been known to originate in the wards of that institution in the last 40 years, during which time about 4000 fractures have been treated there. Yet this termination of a

* The preparation is now in the possession of Dr. Norris, one of the surgeons of the Pennsylvania Hospital.

† Of that number 9 were cured, 2 died and 2 were discharged at their own request. I am indebted for this and much other statistical information, to the kindness of Dr. G. W. Norris.

fracture happens sufficiently often, under certain circumstances, to fill the unwary surgeon with embarrassment, and to demand all his resources, perhaps in vain, to avert the misfortune. Not to dwell upon the misery it may entail upon the patient, there is enough in it that is harassing to the mind of the surgeon himself, as a provokingly tedious and obstinate disease, to give the study of it strong claims upon his sedulous attention.

It does not, however, appear to have received, of late, in this country, the ample consideration which it certainly deserves. We have, it is true, a number of short papers, most of which, however, are mainly occupied with the account of individual modes of treatment. We have also many valuable reports of cases, but not more at the utmost than two or three essays, claiming to be comprehensive on the subject, have issued from the American press.* Nor do our available English sources seem to afford a great deal larger amount of collected information. Although there is much important matter scattered about in various journals and other scientific records of the day, very few monographs on supernumerary joint have been published by British authors. Yet they have made the kindred subject of osseous reparation the theme of many admirable papers.

Probably one of the fullest articles on this form of pseudarthrosis, is to be found in the *last London edition* of Mr. S. Cooper's Dict. of Surgery, an invaluable work, of which it is likely that few copies have yet crossed the ocean. The later and more copious continental writings on this subject are still less accessible to cisatlantic readers. The rich tracts of Troschel, Langenbeck, Oppenheim, A. Bérard, and Seerig,† besides the older treatises of Reissesen and Salzman, are scarcely known to us even by reputation. That of Oppenheim alone has reached our shores. We have, however, among recent French articles of some length, that of Sanson in the *Dict. de Méd. et de Chirurg. Prat.* and of Vidal (de Cassis), Velpeau, Chelius and other systematic authors, together, with a crowd of detached reports which may be gathered from the principal periodicals devoted to the science of medicine in France.

Nor have we in our own or foreign publications any tabular statements and comparisons sufficiently detailed and extensive to assist materially the investigation of the causes and treatment of this pathological condition. The summaries of Oppenheim are the most important that I have seen, but they exhibit chiefly, general results, without giving us any of the particulars. No one questions at the present day, the value of statistics of this kind when properly compiled, as among the surest means of approaching to correct and positive conclusions. It is a matter of regret, therefore, that so little use has been made in this way, of the mass of

* The principal American papers are those of Dr. Hewson (on Mechanism of Preternatural Joints, *North American Med. and Surg. Journ.* January, 1828); Wright *American Journ. Med. Sci.* for August, 1828); and Heard (on Ununited Fracture, *New York Med. and Surg. Journ.* for Oct. 1839.) The last is the only recent one; the object of it appears to be to establish the claims of a plan of treatment said to be *peculiar* to the New York Hospital.

† *De Pseudarthrosi à Fractura Proficiscente*, 1838, by Professor A. H. Seerig of the Albertine University of Ratisbonne. This thesis is the latest, and probably the best. It is not obtainable in this country; and we have to rely upon the bibliographical notice of it by Troschel, who expresses surprise at the great number of observations collected by the author. (*Med. Zeitung, Encyclographic des Sci. Méd.* tome xxxiii, 2d series, September, 1838.)

well attested facts which have been long accumulating; and which are yet destined to shed much light upon the still doubtful points relating to this and other affections of the bones.

A tabular analysis of 113 full and authentic cases has been prepared by Dr. Norris (of this city), who is still adding to it from every source at his command. It bids fair to be the first attempt towards supplying the existing want in this country, while it is a greater effort than seems to have been made by any one abroad. His tables, together with the remarks which it is hoped he will soon present to the public, can not fail to be in the highest degree instructive.*

Meanwhile, the novelty of pseudarthrosis as the subject of a memoir, and especially the intrinsic interest of the graver form of it, have encouraged me, without pretending to offer more than a slight contribution, to devote the remainder of these pages to a brief notice of a portion of the materials within my reach relating to supernumerary joint.

The prevalent belief is, that the humerus suffers in this way oftener than any other bone. This impression is founded on the personal experience of many surgeons, but is not confirmed by the researches, as far as they go, of Dr. Norris. The following is a summary taken from his large table:—Of 113 cases, 37 occurred in the femur; 24 in the leg; 35 in the humerus; 15 in the forearm, and 2 in the jaw.

This, as well as the other summaries of Dr. Norris, does not include the joints which ordinarily follow infra-capsular fractures. S. Cooper gives the fullest list of these. In his words, fractures of the patella, olecranon, condyles of the femur, coronoid process of the ulna, acromion, and the coronoid process of the jaw, are generally united by a ligamentous substance. (*Surg. Dict.* Lond. 1838, art. Fracture.) It is very probable that these fractures, more particularly transverse fractures of the patella and olecranon, are followed by a movable joint between the fragments in a large proportion of cases, but some exceptions have been proved against the rule. Boyer and Desault, and more recently, Earle, Amesbury, Dupuytren and others, do not acknowledge it, and adduce their own success with these fractures in support of their position.

The supernumerary joint is nearly inevitable in the fracture within the capsule of the cervix femoris. No authoritative writer has ever denied the possibility of bony union in this case, but high and numerous authorities positively maintain its extreme improbability. Others have as warmly and elaborately advocated the doctrine that, except in the event of very advanced age, debility or other accidental cause, consolidation ought to be obtained. The discussion of this much agitated question, appears to have resulted in a pretty general admission; that the disputed ossifications *have* taken place, and that under favourable circumstances of youth, robust health, slight displacements, &c., they may be hoped for: but that such consummations are few and far between. MM. Richelot and Chassaignac, in their French translation of Sir A. Cooper's Surgical Works, estimate the proportion of instances of union to those of non-union, as one to fifty. S. Cooper tells us that Sir Astley himself now has in his possession a preparation† which he admits to be a genuine specimen of bony union within

* We expect to be able to present this paper to our readers before long.—Ed.

† There is said to be another undoubted specimen in the possession of Mr. Adams, Dublin.

the capsule.*—(*Surg. Dict.* 1838, art. Fracture.) The joint in the patella, &c., is for an obvious reason, usually attended with moderate inconvenience, especially when care is taken, (with due regard to other indications,) by approximating the disunited surfaces as much as possible, to shorten the connecting medium. The bond of union has sometimes been elongated by a too early use of the limb. An instance of this is described by Dr. Kirkbride. (*Clin. Reports, in Amer. Journ. of Med. Sci., for February*, 1835, p. 32.) Lonsdale also, who has remarked this in the patella, directs the continuance of the splint for a longer period on that account. (On Fractures, p. 438, 1837.) Still even when the separation of the fragments is considerable, the muscles in time accommodate themselves in some degree to the change.

Causes.—In entering upon the investigation of the causes of the supernumerary joint, the reader need hardly be reminded that it arises from the protracted disunion of a broken bone; or, in general terms, that it is the effect of whatever interrupts the natural filling up of a breach of continuity in a portion of the osseous tissue. We have, then, to review the circumstances alleged to be opposed to the regular advance of separation in such tissue, if we desire to ascertain any of these causes.

A numerous assemblage of conditions is reputed to be adverse to the union of broken bone. These conditions are mechanical or constitutional in their nature; the latter kind may be general or local.

Under the first head are enumerated motion of the fragments; want of apposition of them; the interposition between the fractured surfaces of foreign bodies, loose pieces of bone, or a portion of the soft parts. We find under the second, advanced age; malignant fever; cachexia from debauchery, &c.; considerable organic disease, phthisis, scurvy, syphilis, cancer, &c.; pregnancy; altered mode of life; insufficient nutrition of the bone; disease of the bone; disorder of the contiguous soft parts;—in short, "diseases and dyscracies of every kind."

These are the principal derangements, and will give some idea of the wide range of general disorders which have been suggested by various authorities, and repeated in the books and schools, as the probable conditions predisposing to supernumerary joint. But the reality of many of them as such, and the relative importance of the few less questionable among them, are by no means conclusively determined.

It is impossible to reconcile without supposing their uncertainty, the discrepant opinions of pathologists respecting them. Some will scarcely admit the existence of the second class; while others are almost as loath to yield any place to the first. We are told by one surgeon that he has repeatedly seen fractures heal without delay under circumstances which are announced by another as decidedly unfavourable to such a termination.

These conflicting statements, even without any more positive testimony, would warrant a strong suspicion that few, if any, of the so called influences can be constant in their deleterious action. Experience has proved the bad consequences of most of them to be as rare as they are variable. "There is no tissue," says a late writer, "in which union takes place more surely than in the osseous tissue, as the whole history of simple

* We have seen a specimen of this in the possession of Prof. Mussey, who informed us that he had met with two or three instances of bony union within the capsule of the neck of the thigh bone. We trust he will not further delay his long promised account of these cases.—Ed.

fractures clearly shows." (Dr. R. Coates *Am. Journ. Med. Sci.* for Nov. 1834, p. 160.) Few surgeons are there who have not witnessed admirable demonstrations of this truth. Lonsdale is disposed to suspect that the few cases in which union is not completed are the exceptions, not the general rule. In his opinion a very large statistical table illustrating the comparative frequency of union and non-union during the complication of any constitutional disease, is needed to enable us to judge with any confidence of the amount of weight to be attributed to it. (*Op. citat.* p. 84.) Sanson avers, what is probable enough, that none of the causes exert the same energy on different subjects. According to him, their action is null in the majority of cases, and we see fractures uniting quite as well in individuals infirm with age, or affected with syphilis, or scurvy, or in pregnant women, as in young and healthy persons. In a word, we see consolidation going on in despite of the greatest displacement of the fragments and in the most restless and intractable patients. (*Op. citat.* p. 494.)

Although the operation of the mechanical causes does not appear to be at all times absolutely incompatible with union, yet inordinate motion and malposition of the fragments have ever been accounted fruitful sources of obstruction to the cure of fracture.

To keep the parts at rest, after the reduction and coaptation of the separated surfaces is always the main object which the practitioner has in view in the management of this like that of every other simple wound. Surgeons of every age have exercised their ingenuity with unbounded zeal in the contrivance of a host of instruments intended to answer this important indication. The injurious disturbance of the fragments which these various kinds of apparatus have been devised to guard against may arise of course from many causes, which, however, it is not our province here to specify. Either the surgeon or the patient, or both together may be at fault; or they may be assailed by untoward complications and other difficulties, which no surgeon or patient, however competent on the one hand and docile on the other, could surmount or avoid.

Frequent motion of the fractured limb is the only cause of imperfect separation mentioned by Celsus. He speaks of fractures that have not consolidated *quia sæpe soluta, sæpe mota sunt.* Duverney, Desault, Boyer, J. Bell, C. Bell, A. Cooper, Dupuytren, Béclard, probably, nearly all the older writers, and most of those of the present age concur in regarding it as the most common cause. Duverney, the predecessor of Desault and Boyer, was particularly urgent and impressive in his admonitions in relation to the moving of a fractured bone. At the present day, in nearly the same sphere of action, Roux, Velpeau, Sanson, and others, are equally positive in giving motion the precedence, in the of category ills by which a fractured bone may suffer. According to Liston, it is only in case of previous disease of the bone that disunion cannot generally be attributed to some carelessness either of the surgeon, or of the patient. (*Elements of Surgery*, page 312.) Seerig, in Germany, affirms, that false joints would be much more rare if fractures were always dressed immediately after their occurrence. (*De Pseudarthrosi a Fractura Proficiscente*, 1838.—*Troschel, Encyclograph. Des. Sc. Méd.* tome 33, *2me serie*, Sept. 1838.) "In this way only;" remarks Dr. Macfarlane after expressing an opinion similar to Liston's, "can we explain the fact that false joints after fractures are most frequently met with in the humerus, because we know it to hold good as a general rule that diseases and injuries of the

upper extremities are more manageable than those of the lower," (*Surg. Report of Glasgow Infirmary, Edin. Med. and Surg. Journ.*, vol. xlvii, 1837.) It might be added perhaps, that in this way can we most plausibly account for the fact, that not a few cures have been obtained of such joints, even several months after the fracture; as well as of retarded union of shorter duration, by the aid of retentive apparatus alone. Witness the reports of Boyer, S. Cooper, Troschel, Velpeau, Amesbury and others.

The fact that the supervention of pseudarthrosis upon fracture is a mishap nearly unknown in the wards of large hospitals, and in the practice, however, extensive, of careful surgeons,* affords still stronger presumptive evidence of the greater frequency of the mechanical impediments to bony union and above all of that of motion.

Out of 44 authentic cases analysed in Dr. Norris's table, 22 were evidently produced by bad treatment. Others might be stated here in addition to his, were it necessary to occupy so much space and time in discussing what seems to be a scarcely mooted point.

Brodie, however, although he does not wish to deny that the motion of the limb can be sufficient to prevent union, is yet somewhat disposed to doubt it, and thinks that in most instances the fault is to be found in the state of the constitution. He has found after trying the experiment upon them again and again, that it was followed by no such consequences in the bones of inferior animals. (*Clin. Lect. on Ununited Fractures, Lond. Med. Gaz.*, vol. xiii, p. 56, 1834.) This does not coincide with the experience of MM. Breschet and Villermé. These gentlemen describe nine supernumerary joints produced inthe bones of dogs; the rudiments of six of them were recognized at the expiration of the 18th day.

"The somewhat injudicious application of dressings, cannot, in my opinion," says Oppenheim, "be considered as a real source of non-union: otherwise, cases of false joint would be much more common than they are."—(*Zeitschrift für die gessammte Medicin*, May, 1837.) In support of this, he adduces the fact, that compound fractures, the treatment of which requires the daily disturbance of the fragments, nevertheless, fail to consolidate no oftener than simple fractures. This argument controverts the dogma of the necessity of *perfect* rest contended for by some surgeons of mechanical celebrity, more forcibly than it does the validity of unrestrained motion as a promoter of pseudarthrosis. For the comparatively slight movement of the limb, unavoidable in dressing the wound, is of the gentlest nature; is made usually at stated periods and intervals of some length; and generally may be dispensed with at the critical period of commencing consolidation, since at that time, the external wound may no longer need so much attention. Oppenheim uses a second argument which is more to the purpose. He states it thus:—Neither can the influence of this cause be well assumed in fractures of the leg or fore-arm when one

* Liston never met with but one in his own practice, and that was brought on by the "absurd conduct of the patient" in using his broken arm, and removing the splints without consulting his surgeon. (*Elements of Surgery*, p. 331, part iii.) Troschel justly remarks, of the different modes of treatment of simple fracture, that in the practice of wary surgeons whatever be their theory, it is very rare to observe pseudarthroses in important places. (*Encyclograph. des. Sc. Méd.* tome xxxiii, Sept. 1838, from *Med. Zeitung.*)

bone unites and the other remains disunited. These arguments, drawn from experience, against the incompatibility of motion with the regular consolidation of fractures, have doubtless presented themselves to other practitioners; and well deserve attentive consideration. They were promulgated in this city by Dr. Hewson, nine years before the publication of the paper of Oppenheim, from which we have just taken them. (See *N. Amer. Med. and Surg. Journ.*, Jan., 1828.) It is true, that several cases, such as those brought forward above, in which one of two broken bones in the same limb unites, and the other does not, are known to have occurred in America as well as abroad.* It is well known, moreover, that cases occur in persons having every appearance of high health, and who have been treated with unimpeachable skill and judgment. As many as 22 at least of the 113 cases in the analysis of Dr. Norris received the best treatment and presented no symptom whatever of ill health. Ruysch and Van Swieten long ago observed cases of this kind. White (*Cases in Surgery*, p. 85, 1760.), Boyer, (*Op. citat.* vol. iii, p. 82,) and others quote them. S. Cooper speaks of "certain indescribable constitutions, in which bones will not unite again after being broken," and gives two examples. (*Op. citat.*) Sanson avers, that there must be "a peculiar and hidden disposition, or, if you will, a sort of predisposition, which is sometimes so powerful, that it alone suffices to retard considerably the reunion of the fragments, or entirely to prevent them from consolidating." He cites five cases in which it was impossible to discover any appreciable cause; and is inclined to believe that no surgeon of much experience has not seen something of this description.—(*Op. citat.* p. 494.) The pretty well established existence of this unknown cause of itself alone gives ample room for the indulgence of speculation, while it casts a shade of doubt over the more substantial etiology which we would fain believe to be founded on matter of fact.†

Mr. Amesbury, although he does not neglect to give some weight to

* A remarkable instance of two distinct fractures in the same bone, one of which healed directly and the other became a joint, is related by Mr. Houston, (Obs. on Fractures, &c., *Dublin Journ. of Med. Sci.* for Jan. 1836.) An old woman, by a fall, fractured her thigh bone. After lying in the hospital for several months, without any apparent suffering, her limb was braced up with adhesive strips, and she was enabled to walk about by the aid of crutches. She did not, however, long survive her convalescence. After death, it was discovered, that in addition to a transverse fracture of the middle of the shaft, a perpendicular one four inches in length, ran up to the trochanter. The transverse lesion exhibited a perfect false joint with fibrous capsule and synovial membrane, whilst the portion detached by the perpendicular fracture had become firmly and universally united to the original bone, in a manner which showed that the union must have been accomplished in a very short period from the receipt of the injury. Mr. Houston gives the foregoing as a singular illustration of his point, in questioning the accuracy of the doctrine, that want of inflammatory action will be attended with a corresponding imperfection in the secretion of callus. In continuing his remarks, he goes on to say, "Here the common explanation will not hold good, as the action was fully competent to the reparation of the lateral fracture, though it failed in the transverse one." Want of proper apposition, and the frequent occurrence of motion between the two main pieces of the bone, he supposes, with good reason, to have been the cause of non-union at this part. It appears to be a forcible and rare illustration of the effect of these mechanical causes.

† The specious cognomens of "a peculiar disposition," "a concealed cachectic vice" &c. &c., afford but a very thin cloak to our real ignorance of the true nature of these pathological phenomena.

other causes, goes further than most authorities in denouncing the want of rest in fracture, as fatal to the work of reparation. He is disposed in nearly every instance to accuse the apparatus, rather than the constitution, as the root of the mischief. The opinions of one who has seen so much of this kind of disease, would be of much higher value, were it certain that they are not more or less biassed by his predilection for a peculiar theory, his devotion to which is not very well calculated to increase our confidence in his expositions. His statements, therefore, that out of 90 cases of supernumerary joint, only 4 could be attributed to constitutional derangement, we are forced to receive *cum grano salis.*—(See *Amesbury on Fractures*, vol. ii, p. 720, 1832.) We are by no means convinced that the whole 86 cases are to be charged to defective treatment in any but Mr. Amesbury's acceptation of the phrase. One of those cases was attended for the previous fracture by Sir A. Cooper, another by Mr. Green, either of whose names is enough to assure us that in those instances, at all events, no mismanagement existed. Nevertheless, his representations, proper allowance being made, are highly important, but they do not appear to sustain the somewhat ultra doctrine that *absolute* rest and apposition are indispensable to the ready cure of the great majority of fractures. This hypothesis is one which John Bell was at great pains to overthrow, (although then existing only in his own prolific imagination,) when lecturing against the "continued extension" of Desault and Boyer. It is abundantly disproved by the success which these distinguished French surgeons themselves so long enjoyed in the vast field of their triumphs, and is equally confuted by the every day experience in the public and private practice of the last half century on both sides of the Atlantic.

According to Lonsdale, not more than 5 or 6 cases of supernumerary joint (except those within a capsule,) have occurred out of nearly 4000 fractures that he saw treated during 10 years at the Middlesex Hospital. In that institution "none of the fractures are treated with the absolute rest which Mr. Amesbury describes as being only attainable by his various kinds of splints." (*Op. citat.* p. 89.) In the Pennsylvania Hospital, where the simplest dressings only are employed, and where Mr. Amesbury's machines never found approval—out of 948 fractures, during ten years, not a single case (excepting always those arising from an infracapsular fracture,) has originated in the wards. As far as can be ascertained, only one genuine pseudarthrosis has followed a fracture treated there in the course of the last 40 years. In that solitary instance, the joint was most probably owing to the mistaken indulgence of the attending surgeon (long since dead,) who yielded to the entreaties and vociferations of the patient, and forbade the application of the extending and retaining apparatus. Hammick, who has seen, according to his own account, as much of fractures as any man living, informs us, that he never discharged from the Plymouth Hospital more than 3 patients with the bones not united. (*Lects. on Fracts., Ampts.*, &c., p. 122, 1830.)

We take leave of the study of the effects of motion on a fracture in stating them as detailed by Mr. Palmer. In his words, "The ossific process is arrested, and a new disposition created for the formation of a bursal structure, similar to what takes place in other parts of the body when friction is employed. It should be observed that constant motion of a fractured bone will inevitably lead to false joint; but this will be differently

formed in different cases. If the process of union has been interrupted from the commencement, the broken surfaces will be rounded off and covered with hard enamelled surfaces, enclosed by an adventitious synovial bursa; but if the interruption has taken place during the ossification of the callus, then the extremities of the bone will be united by a cellular or fibro-ligamentous structure." (HUNTER'S *Lectures on the Principles of Surgery*, edited by Palmer, vol. i, p. 504.)

Want of apposition of the fragments, is thought by some persons to be a more serious evil than want of rest. The records of surgery contain many proofs that it is by no means constant in its bad effects. In White's first case of resection, (not for pseudarthrosis, but for caries,) in which the head of the humerus was removed, there was a loss of four inches of the whole substance of the bone, yet the limb was shortened but one inch. From the unaltered figure of the arm, its entire usefulness, and its appearance to the eye and touch, the operator, in the plenitude of his satisfaction, though he might "safely say the head, neck and part of the body of the os humeri were actually regenerated."

Gooch narrates a case in which the loss of 5 inches of the tibia was supplied by solid bone; Van Swieten, one of the restoration of 4 inches of the bone, and La Motte another in which 6 inches were replaced; (see White and others.) Heister quotes an instance, about which he himself is a little skeptical, given by Horstius, of the regeneration of "3 fingers breadths of the bone of the foot." Mr. B. Phillips saw the renewal of 5 inches of bone in one case, and of a large portion of the clavicle in another. (*Lectures on Surgery in Lond. Med. Gaz.* for 22d of May, 1840.) Examples of this kind must be familiar to every hospital surgeon. So also must be those where, particularly in compound fractures, union has followed, notwithstanding much displacement and very slight contact of the fragments, even by their sides.

The great difficulty of approximating the fragments in transverse fractures of the patellæ, olecranon, &c., is given by many surgeons as one of the principal causes of their non-union, except by flexible membrane.

Foreign bodies, or pieces of dead bone, either by mechanical interposition, or by irritating the parts into suppuration, may sometimes interfere with the sanatory process in a fracture. The effects of pieces of cloth, bullets, splinters, &c., in keeping up a profuse and long continued flow of pus are well known. Benjamin Bell tells us that he has "met with different cases [of simple fracture] where a cure being considered as impracticable, from no union having formed between the ends of the fractured bones, it was at last accomplished in the course of a very short time by the removal of some of the loose fragments." (*System of Surgery*, Edinburgh, 1788, vol. vi, p. 44.) He also remarks that a considerable accumulation of blood around the seat of fractures is very apt to interfere with the progress of union. More recently Mayo and Lonsdale have observed this effect of copious extravasation of blood, in the Middlesex Hospital. (Lonsdale, *Op. citat.* p. 90.) Foreign bodies may remain in a fracture without giving rise to any bad symptoms, and may be enclosed in the new formed callus. A remarkable instance of this is related in the *Gaz. Méd.* for July, 1838. A piece of iron 35 lines in length and 5 in breadth was found by M. Vogelvanger, after death, and two years after the accident, completely embedded in a deposit of callus in a fractured femur.

A portion of muscular or fibrous tissue interposed between the fragments, has been considered an occasional obstacle to reunion. It was first suspected by White (of Manchester); B. Bell dwelt upon it as a most perplexing accident. Wardrop described it, and suggested an operation for the removal of the intruded membrane. S. Cooper, Sanson, Brodie, and many others, have noticed it in succession. Liston ridiculed the idea of such a difficulty as an "absurd notion." (*Clin. Lect. on Fractures, Lancet*, vol. ii, 1836.) According to Macfarlane, the forcing of lacerated portions of muscle or tendon between the ends of the fractured bone is not at all uncommon; but these, particularly the former, become absorbed by the firm pressure employed to retain the bones in place. "It is different," continues he, "when the bones are not accurately approximated, or when the intervening substance does not yield to the pressure to which it is subjected." (*Loc. citat.*) In many instances of this kind there is so much displacement, that the bones appear to be thrust as much into the muscle as the muscle to be driven between the bones. The case in which Mr. Rowlands operated by resection, may serve as an example of the condition last described by Macfarlane in the above quotation. It was that of a fractured femur, the broken ends of which were so separated by a fleshy substance between them, that it was impossible to bring them together. (*Medico-Chirurg. Trans.* vol. ii, p. 49.) This state of things is familiar to surgeons, as having been not unfrequently met with in operations for the relief of supernumerary joint, and no other instances need be recounted here.

Compression from a too tight bandage, or compression too long continued, is a predisposing cause which has a rather ancient reputation. It is mentioned by Ambrose Paré, (*Workes of that Famous Chirurgion*, Trans. by Thomas Johnston, Lond. 1649, lib. xv, p. 379,) and is the object of a caution which is said to have been handed down from the founder of surgery himself. Tropa long since satisfied himself that it prevented the formation of provisional callus. Within the last three years it has been urged by M. Fleury as a far more frequent cause than was generally imagined, in consequence of the prevailing system of treating fractures by the immovable apparatus. He cites four cases as examples of its influence. (*Archives Générales*, vol. xliv, p. 442, 1837.) According to Sanson, Velpeau and others, it acts by producing a sort of atrophy of the limb, which presents the aspect of what Jules Cloquet has described as *scorbut local*. Brodie thought the want of consolidation due, in the event of too great pressure, to its cutting off the supply of blood from the seat of fracture. Malgaigne attributes the want of union under the same circumstances to the pressure hindering the deposit of the provisional callus. (See Velpeau, *Méd. Opérat.* tome ii, p. 584.)

Constitutional Causes.—It has been already intimated, that there is a great lack of unanimity among writers, respecting the influence which is somewhat vaguely and hypothetically assigned to many of these conditions of the general system.

Supernumerary joints have undoubtedly occurred under circumstances, which analogy would lead us to infer to be exciting causes. But it is equally undeniable that fractures have been repeatedly consolidated under similar circumstances without the slightest difficulty. It cannot be denied then, that our knowledge of the mode of action of these causes, based upon extended observation, is limited to an unsatisfactory degree.

An opinion to this effect is thus stated by Vidal (*de Cassis*) in his *Pathologie externe*, (vol. ii, p. 18, 1839.) "Renewed and accurate observations are required to confirm these data supplied by theory; or, at least, it behooves us to establish more precisely, in what case, and how far, these states of the system contravene the production of callus." Again, "Be it as it may, when we closely scrutinise these questions, and seek in the annals of science the facts on which the authors of these propositions have based them, we are astonished at their rarity, and the little value of the greater part of them. Amesbury, however, firmly persuaded as he is that in the large proportion of joints after fracture, their origin is due to the defects of the ordinary mechanical treatments; nevertheless does not hesitate to say "that the process of union in bone, is influenced by all those causes which affect the healing of the soft parts.* Were we disposed to be satisfied with mere conjectures, the analogy thus hinted at would tend strongly to impress us with the importance of attending to the constitutional causes. Experienced practitioners are not wanting who lay great stress upon the influence of the general health.

The ideas of Brodie and Oppenheim have already been submitted. Hammick suspects that there are many more causes besides motion for a failure of union than are commonly imagined. No one had a better opportunity for forming an opinion from his own experience than this able surgeon long enjoyed in the Plymouth Naval Hospital.

Let us consider separately some of the principal of these derangements of the organism.

1. *Old Age.*—It is easy to conjecture how the altered structure of the tissue and the enfeebled actions of the economy incident to what is styled old age, may preclude the growth of callus. But although the tediousness of the recovery of aged persons, after a fracture is a matter of continual remark; yet, in the absence of sufficient data, we are at a loss to know how much even here to attribute to the physiological dyscrasy alone. Fractures have been known to heal steadily and surely in individuals of both sexes far advanced in years. Some idea of the relation of age to the frequency of supernumerary joint may be formed from another of Dr. Norris's summaries.

Between the ages of	10	and	20	there were		14
Between "	"	20	and 30	"	"	38
Between "	"	30	and 40	"	"	16
Above "	"	40		"	"	18
						86
Of the cases in which no age was stated						27
Total						113

We may also, by a similar course of reasoning, without difficulty, account for the failure of union in a cachectic patient, in one suffering

* "Causes of non-union might be said to be either constitutional, constitutional and local, or purely local. * * The constitutional are fevers, scurvy, &c.; also some organic diseases, as phthisis, dysentery, &c., which occasion great disturbance in the system; likewise constitutional debility, as scrofula, &c., or acquired, as that enfeebled state which is often produced by habitual debauchery." (Amesbury. *Op. citat.*, vol. ii, p. 713.)

from a debilitating acute or chronic disease—such as dysentery, for example; or, in the last stage of phthisis, cancer, syphilis, &c. One could readily theorise in support of such a belief, but we want many facts to sustain it, and have already in our possession some that are, at least, exceptions to the given rule.

Inordinate vascular depletion, long continued fasting, a depraved diet, the withdrawal of an habitual stimulus—All have been seen to impair very decidedly the reparative function. Their injurious operation was much regarded by the older surgeons. Paré in speaking of "those things which retard the generation of a callus," gives a prominent place to the use of "such nourishment as offends in quality, or quantity, or both." (*Op. citat.* p. 379.) J. L. Petit, Heister, Duverney, &c., recommend a more nutritious diet, after inflammation is no longer to be dreaded. They were particular to allow the patient "nutriment solid and proper for his constitution and manner of living." (Duverney, *op. citat.* p. 170.) The propriety of their precautions has been well exemplified by Brodie, and more lately by a writer in the Medico-chirurgical Review, (vol. xxiv, New Series, Jan. 1836,) each of whom cites striking illustrations of the effect of an altered mode of living. A gentleman accustomed to the enjoyments of the table, in order to check and reduce his increasing corpulency subjected himself to a very spare diet. After six months' "starvation" he broke his arm and was seen by Brodie months afterwards with the bone still ununited. A lady by pursuing a similar system of abstinence hoped to effect the same object, and having broken her arm was equally unfortunate. (Brodie, *Op. citat.* p. 57.) The same author further quotes a case, which Wilson used to relate of a dram drinking woman who broke her leg. The bones exhibited no disposition to unite until she was allowed to take her customary drink, when they healed immediately.

Cold Applications.—The continued application of cold dressings to the limb after their indication has ceased was accounted by Dupuytren as not only instrumental in retarding consolidation but even in exciting reabsorption: hence he proscribed all baths and douches during convalescence. His admonitions on this point are repeated by Amesbury and others. Vidal de Cassis asks for more facts to confirm the accuracy of Dupuytren's opinion. It is an old remark also that fractures heal more slowly when exposed to the cold of winter. Boyer supposed temperature to have some influence but believed it to be very slight. During the rigorous winter of 1830, M. Goyraud collected some facts which accorded with the popular belief. Vidal de Cassis, (*op. citat.* p. 18.)

Paralysis.—Want of innervation from paralysis may render all attempts at effecting consolidation abortive. Mr. B. Phillips relates a well marked case, in which the same accident that fractured a man's thigh injured the lower part of his spine. He lived five weeks, but there was no effort at reparation. (*Op. citat.* p. 327.)

Scurvy.—The baneful effects of scurvy upon fractures, as upon all other wounds, have been demonstrated beyond all doubt. Many of the writers of the middle ages were familiar with its disastrous influence. (See S. Cooper, *Op. citat.*) "Scurvy," says Hammick, "will not only prevent union but dissolve it after it has been formed for many years. In the famous siege of Gibraltar where this disease made great ravages, bones became separated which had been for a length of time united." (*Op. citat.*

p. 118.) Callisen also states that the callus of an old fracture could be thus softened by a scorbutic taint. *A labe scorbutica callum fracturæ diu sanatæ iterum mollescere posse ipsi observabimur.* (*Systema, Chirurg.* tom. i, pars xvii, ord. iv, p. 733, 1798.) The reader will remember the oft quoted history of Lord Anson's Voyage which describes old fractures as giving way, and the scars of old wounds or ulcers as breaking out anew in many of the sailors who were prostrated by this horrible disease.

"In the early part of the French war," we quote Hammick once more, (p. 118,) "about the years 1793–4–5, we received a great number of the worst cases of scurvy—at least six hundred; and although I never recollect an instance of its having dissolved the union of a fractured bone which had attained to any degree of firmness, yet it entirely prevented it from taking place whilst the patient was labouring under any scorbutic diathesis. Bad diet, and foul air from confinement in ill-ventilated dark rooms, or underground cellars, will prevent union." This author had an opportunity of observing the latter at a time when the hospital was extremely crowded.

Cancer has long had the reputation of being unfavourable to the firm reunion of bone. S. Cooper attended cases in which the cancerous diathesis appeared to be the deleterious agent. He quotes Leveillé (*Nouvelle Doct. Chirurg.* tome ii, p. 159) as having watched them in l'Hotel Dieu, also Sir Astley Cooper, as having met with instances in his practice. There are examples on record, however, of success in the treatment of fracture even in advanced stages of cancer. Mr. Brodie treated an old woman who was "dying with cancer," and who, in turning one day in bed, broke her femur. Contrary to his expectation, the fragments united perfectly well. Mr. B. had the care of a lady who had cancer of the breast, and pains in the limbs, indicating cancerous diathesis of the bones. The clavicle which was affected with scirrhus, was accidentally broken by the motion of her arm, but it united as readily as a healthy bone.

Liston gives a well marked case of unexpected success of this kind. A female ætat. 49, fractured her humerus by slight muscular exertion. She had long laboured under some affection of the spine which confined her to bed. She presented also a well developed carcinomatous tumour of one mamma, the axillary glands being involved. The other mamma was in progress towards the same condition, and a schirrous tumour had made its appearance behind the angle of the jaw. Her surgical attendants were fearful that the fracture had arisen from the malignant degeneration of the medullary canal of the bone, which occasionally takes place in a system thoroughly pervaded with the carcinomatous diathesis. They were agreeably surprised, however, to find the healing of the fracture going on just as well as under ordinary circumstances. (Liston, *Clin. Lect. on Fracts.* Lancet, April 30th, 1836, p. 165.)

Syphilis.—Oppenheim totally discards the suspicion that syphilis retards the union of fractures. He cites various cases from his own experience, in which the constitutional disorder made not the slightest impression on the fracture, and quotes Lagneau (*Exposé des Sympt. de la Malad. Ven.* Paris, 1818,) and Berard (*Des Causes qui empechent ou retard la Consol. des Fracts. &c.*, Paris, 1823,) to the same purpose. He is strongly inclined to ascribe the failure to the remedy employed rather than to the disease. (*Op. citat.*) Sanson has had the care of two

decided cases, which soon gave way to appropriate treatment; (*Op. citat.* p. 492.) Hammick speaks of some fractures which he cured by the aid of mercury; and thinks that this may often be indicated where union advances slowly, and a venereal diathesis is to be suspected. (*Op. citat.* p. 117.) Vidal de Cassis believes that syphilis can rarely derange the formation of callus.

Pregnancy and Lactation.—The same, according to this author, may be said of *pregnancy*, which, together with *lactation*, is regarded by many pathologists as sufficient to check reparation. Leveillé, Boyer, Delpech, Dupuytren, S. Cooper, Liston and many others, have met with fractures that were not prevented from consolidating in the usual time by the co-existence of the gravid uterus. Dupuytren has seen a fracture heal readily in a pregnant woman, who, at the same time, was afflicted with cancer. On the other hand, Hildanus relates two cases of supernumerary joint produced in pregnant women. (*Obs. Chirurg. Cent.* v, obs. 87.) Alanson (*Med. Obs. and Inq.* v. iv, No. 37,) reports one, Hammick three, and Amesbury two. Wilson mentions two that he met with, but speaks of others, in which this state of things made no difficulty further than perhaps a short delay. (*On the Human Skeleton*, p. 214.) Hammick would not be understood to attribute any direct action to the state of pregnancy, but surmises that it may be due to the debility which gestation sometimes produces. This appears to be the idea of Amesbury in relation to his two cases. Liston, after observing that he had often seen pregnancy to have not the slightest effect, goes on to say, "Profuse uterine or vaginal discharges, or determination to particular parts or organs, will certainly retard union." (*Elements of Surgery*, p. 460.)

Local disorder.—"According to Langenbeck," says Sanson, "a fever, an erysipelas, causes which must be regarded as the least active, have sufficed to soften callus already far advanced." The experience of others accords with this: Wardrop met with two cases of this kind, which he details in his paper in the *Medico-Chirurgical Transactions*, (vol. v;) Malgaigne, (*Lancette Française*, tome iii, p. 218,) and Vidal de Cassis, each reports a case. Dr. Kirkbride published the notes of two that came under his eye at the Pennsylvania Hospital. In the first of Dr. K.'s cases, the patient returned with an ulcer over the part, to the hospital, whence he had been discharged cured of the fracture one month before. About three weeks after his return the ulcer commenced sloughing without any assignable cause, and before this could be subdued, the recent callus was absorbed. Caustic was applied to the bone; within three months and a few days, the ulcer was cicatrized, and the bone firm. (*Amer. Journ. of Med. Sci.* for Feb. 1835.

Free suppuration has repeatedly proved a serious obstacle to the regenerating process. The detrimental influence of a constant flow of pus around the seat of fracture is dwelt upon by Pott, J. Bell, S. Cooper and others as very great. Their views are verified by the experience of every hospital surgeon.

Disease of the bone.—If disease of the parts in the vicinity of the fracture may sometimes exert so unhappy an effect, disease of the bone itself must be a still greater misfortune. This is generally the fact, as the annals of surgery fully show. Heister appears to be the first among modern authors who attached much importance to it. He quotes a case from J. L. Petit, and gives the particulars of one that presented itself

in his own practice. A student of medicine, about 20 years of age, was for several years troubled with an ulcer and caries of the inner and middle part of the femur, near the course of the femoral artery. Unluckily, he broke his thigh at the point of caries. Heister was unwilling to dilate the sinus and cauterize the ends of the bone for fear of injuring the artery. The fracture never healed, and the young man dragged a miserable life. (*Gen. Syst. of Surg.* 7th ed. of Eng. Trans. 1763, p. 128.) This and Petit's also, which was cured, was a case of previous disease of long standing. But examples could be multiplied of recent diseases of the bone which have produced supernumerary joint, and have resisted all treatment but that of removal of the affected surfaces. The most remarkable case of disease of the bone was that reported by Marx and Paillard, where a mass of hydatids appeared in the seat of fracture and effectually prevented the reunion of the bones until it was discovered and removed by Dupuytren, in whose wards the case occurred. (*Journal Hebdomad*, 1833, t. xii, p. 97.(

Even in the event of disease of the bones, however, the rule, to use the expression of Brodie, is not absolute. This surgeon had a patient who suffered from the disease of bones, on some of which there were nodes. The clavicle which was the most enlarged and much diseased besides, was broken in the diseased part. To his surprise, it united without the slightest difficulty. Mr. Houston gives an instance, stated to him by Professor Kirby, of "a middle aged man in whom almost every long bone of his body had been broken at one time or another from trifling causes, but notwithstanding what might be called in this case great weakness of the system, all these accidents were repaired with very little suffering, and in a moderately short space of time. (*Dublin Journ.* Jan. 1836, p. 494.) Such examples are not extremely rare. Some very interesting ones are detailed by Professor Gibson. (*Outlines of the Instit. and Pract. of Surgery.*)

Unequal nutrition of the fragments depending on the distribution of the nutritious artery is a local condition of a physiological nature lessening the chances of reunion which has of late years met with much attention from pathologists. The limited supply of blood which the head of the femur necessarily receives when detached from the shaft by fracture within the capsule is regarded by Sir A. Cooper, Boyer and others, as one of the chief difficulties in the way of consolidation of the neck of that bone. This feeble vascularity added to the want of rest and apposition of the fragments is, in their opinion, sufficient to ensure a supernumerary joint in nearly every case, independently of the "senile atrophy" that is often present in that part. Earle, Amesbury, Dupuytren, and their respective partisans deny this, and attempt to prove that the causes of the joint after such fractures are purely mechanical and may be counteracted. There is, however, in operation here, another physiological cause somewhat analogous, and alike negative in its character, which was first explained and insisted on by John Bell, and since his time, by Brodie, Syme, Mayo, Lonsdale and others. It is the absence of the bed of vascular soft parts—cellular tissue in other words, in which most of the supplementary callus is elaborated, as it were,—and which is now considered of material importance to the speedy cure of all fractures. To the want of this is at the present day attributed the slow growth and indeed the frequent absence of callus in fractures of the cranium, as well as the liability to false joint in all infra-capsular fractures.

The derangement of the circulation of a limb by the deligation of its main artery is reputed to be sufficient to interrupt consolidation. According to B. Phillips, this, like every other asseveration of the kind is supported by a few cases.

M. Vidal de Cassis, (*Op. citat.* vol. II, p. 64,) gives an account of some curious researches recently undertaken by M. A. Berard, and followed up by M. Gueretin. They show that the epiphysis of a growing bone, towards which the nutritious artery of that bone directs its course, is consolidated with its shaft sooner than the epiphysis which belongs to the opposite extremity of the same shaft. For instance, this fusion of the condyles of the humerus with the lower extremity of the corresponding shaft advances more rapidly than that of the head of the humerus with its upper extremity, because the nutritious vessel runs from above downwards. Vidal informs us, that M. Gueretin has further discovered a similar relation between the direction of the nutritious canal, and the position of supernumerary joints. The former gentleman has thought it worth while to construct and publish a table of M. Gueretin's results. We subjoin them here as possessing even now more than the interest of novelty, while an extended investigation may prove them to be of great importance in enabling us to solve the question of the obscurer causes of the malady which now occupies our attention.

In the humerus, the nutritious canal courses from the middle of the shaft *downwards*—out of 13 cases in this bone, 9 were found *above* the nutritious foramen and 4 below. In the fore-arm the artery runs from below the middle of the bones *upwards:* 7 cases out of 8 presented *below* the canals in these bones. The nutritious artery in the femur is directed *upwards* from the middle of the shaft: here 5 joints occurred *below* the canal and 3 above. In the leg, the canals have a direction *downwards:* 4 joints were seated *above* the canals in the leg, and 2 below them. These researches will remind the reader of the interesting paper of Mr. Blizzard Curling, on the atrophy of bone, wherein he published his discovery of the effect of the accidental obliteration of the nutritious artery after fracture, in producing temporary atrophy of the impoverished fragment. (*Medico-Chirurg. Trans.* 1837, vol. xx.) The question naturally suggests itself, whether this accident might not sometimes favour even the formation of a supernumerary joint.

In conclusion of this detailed, and it is feared, tedious investigation, we cannot help feeling, to some extent, the discouraging apprehension expressed on a similar occasion by a far more experienced and able writer, that "this review, however humiliating the reflection, is not calculated to afford any one precise information respecting the object of our inquiry."* Our end will be answered, however, if we have placed once more plainly before the profession, in a collected form, the principal conditions which may possibly give rise to the infirmity in question; and especially, if the readers of these pages who have paid little attention to the subject, shall be prepared not only to meet and avert them, but to watch closely their real operation, and report the results of such observations.

Anatomical characters.—We do not propose to enter at this place *in extenso* on the consideration of the anatomical characters, and the diagnosis and prognosis of the disorder under investigation. Suffice it to say,

* Hewson. (*Op. citat.*)

with regard to the anatomical varieties, that they are complex and numerous, as a matter of course, since they depend upon a primary lesion, which is itself the result of accident; and that they are arranged under two principal types.

The commonest of these is the *amphiarthrodial*, in which the fragments are directly connected through the medium of condensed cellular membrane, devoid of osseous matter. The second is said to be *diarthrodial* in character, although some writers still contend, with Boyer, that it presents nothing in organisation analogous to that of a genuine ball and socket joint. We are disposed to hazard the conviction that this difference of opinion might be shown to be more imaginary than real, as in fact verbal merely, and turning upon the logical meaning of the word joint. Certain it is, that many instances are on record, and specimens preserved, in which a sort of "bursal structure" had been formed. The articulated fragments may be unconnected except by a more or less complete, and sometimes decidedly fibrous capsule, which is attached by an irregular margin to their periphery above and below the respective ends; these ends may be rounded off and cicatrized into compact and smooth surfaces; they may be adapted to each other by concave and convex surfaces; or, it is stated, these surfaces may be encrusted by a sort of thin, pseudo-chondroid membrane; lastly, the ends are known to be sometimes lubricated by a fluid resembling synovia; and are said to be furnished with a synovial membrane. Such an arrangement of parts would seem, at any rate, to constitute an articulation, whether or not it possess any exact feature (besides the mobility and discontinuity) in common with the natural organs to which Boyer, (*Op. citat.*) Hewson, (*Loc. citat.*) Syme, (*Prin. of Surg.* part i, p. 245,) and more recently Chelius of Germany, (*Traité de Chirurg.* par M. J. Chelius, Trans. by J. B. Pigné, 1832,) have denied it a resemblance. The limits of this memoir, already somewhat transgressed, preclude our offering any observations in relation to the diagnosis and prognosis of supernumerary joint, even by way of illustration and introduction to the treatment.

Treatment.—In general terms, the object of the treatment of supernumerary joint must be, first, to counteract or remove the cause of the evil, should it still persist; secondly, to excite such an action in the part at fault as may lead to anchylosis of the joint, that is to say, to consolidation of the long disunited fragments. The removal of the cause, (releasing the limb, for instance, from the injurious confinement of a too tight dressing,) is sometimes, especially in the earlier or forming stage of the affection, enough alone to procure this consolidation. The eradication of a constitutional disorder; the invigorating influence of an improved diet and other tonic regimen, together always with the repose, (never to be left unsought for as soon as the requisite action is once started,) which is secured by the skilful employment of an efficient fracture apparatus; or finally, this repose, thus obtained, alone, has frequently sufficed without any other remedy.

A simple course of this kind was often pursued with happy results by Boyer. He confined himself, in many cases, to maintaining the parts quietly *in situ;* occasionally recommending a nourishing diet, and perhaps a mild tonic course of medicine. The following account is selected and condensed from those of five cases, which this surgeon gives as a few out of many, that he treated with success in this manner. A young man,

ætat. 19 or 20, enjoying good health, but thrown into a state of despair by having gambled away a large sum of money entrusted to him, jumped from the bridge of the Tuilleries into the river. He fell upon a raft, and broke his right thigh obliquely in the middle. The fracture was treated in the usual manner in the hospital La Charité. At the end of four months, the fragments, which had overlapped considerably, were still very movable. A number of operations were proposed for the relief of the man; but no plan was agreed upon till M. Boyer undertook the treatment. The limb was kept in a state of continual extension by the ordinary bandages, which were carefully tightened every day. In three months, that is to say, seven months after the accident, the fracture was firmly united. (*Malad. Chirurg.* t. iii, p. 98.) Velpeau speaks in the highest terms of an analogous, but perhaps more perfect treatment, by the aid of the immovable apparatus. A very extensive employment of this apparatus has convinced him that it will enable us to cure the greater number of false joints without any other operation, and in support of his views, he cites the practice of Larrey, Berard, Jr., Macdowel, Thierry, &c. M. Thierry cured, with the starch bandage, in two months, a pseudarthrosis of this kind that had existed for one year. Among other facts which Velpeau communicates from his own experience, we find the following. Mde. B. suffered a fracture of the humerus. Thirty months afterwards it was still flexible, notwithstanding the care of many distinguished surgeons of the capital, and the employment of all sorts of bandages. The dextrine was applied and left unchanged for two months; at the end of that time, to the great surprise of the patient, the removal of the dressings exhibited the bone in a state of consolidation. The same happened in a supernumerary joint of the femur, of ten months standing. (Velpeau, *Méd. Operat.* 1839, tome ii, p. 585.) Instances of similar good effects, from the use of the retentive apparatus of Baillif, are related by Troschel in Germany. With the immovable apparatus properly applied, says Velpeau, we can hope then to cure all pseudarthroses that are not maintained by a want of energy, a general disease, or a degeneration of the fragments; and all that are owing to the defect of sufficient contentive means.

But in the more formidable cases, although the original cause of the mischief may have disappeared, reparative action has entirely ceased; the parts exhibit no disposition to unite, and rather seek to adapt themselves to their new condition and relations. This state of things calls for a more energetic treatment than the passive method we have just described. A decided impression must be made in order to arouse the dormant regenerative forces of the implicated tissues. The excitement of a reproductive action, whether it be inflammatory in itself or not, is the leading indication.

Although there are many modes of attempting to answer this indication, yet they are all more or less uncertain, and frequently tedious and painful. Some of them subject the patient to great and protracted suffering, and may even place his life in jeopardy. The views of surgeons on the treatment as upon the etiology of this perplexing malady, are far from being firmly settled. Certain it is, that although none of the numerous and diversified methods of treatment recommended by different authorities, has been entirely discarded, yet there is scarcely any that has not at times, however faithfully pursued, greatly disappointed the practitioner. The multiplicity and varied character of these plans, together with their occa-

sional failure and occasional success, would appear to be sufficient, without recurring to the history of the causes, and of the various forms of the disease, to show that no remedy yet devised can be expected to answer the indications with uniform success in every case, or even in the majority of cases.

Oppenheim, in expressing sentiments to this effect, avers that an appropriate remedial measure, adapted to all the various forms of this injury, still ranks among the *desiderata chirurgiæ*. In the absence of such a measure, of course it becomes important, by more extended observation, to determine, with precision, by what circumstances as a general rule, the principal remedies are especially indicated.

These remedies are general and local. The first include regulated diet, tonics, alteratives, &c. They need not occupy our attention at any length since their administration must be governed by certain well known general principles. "According to the variety of causes, medicines shall be applied," are the words of Ambrose Paré in relation to this subject. They express a truism that requires no amplification.

As instances of the occasional service of constitutional means, even in patients of apparently good health, we have cases recorded in which the exhibition of mercury in small doses, combined with the usual mechanical treatment, has been marked by favourable results, after other measures had been essayed in vain. Salivation, however unnatural it may seem as a remedy for imperfect separation of bone, nevertheless, was practised with success, at least ten years ago, by Mr. Hammick. A marine with a fracture of the leg of several months duration, came under his charge. Having accidentally discovered that the man had been suffering less than 12 months before under severe syphilitic symptoms, he put him upon a course of mercury; and before ptyalism went off, the leg had firmly united. After cautioning his pupils against the indiscriminate use of this medicine, except in cases of venereal disease, lest it retard union by the debility it produces, he goes on to say—yet mercury will frequently be required by patients who have never had any syphilitic taint, not only as an alterative, but even pushed to a considerable extent before union of a fractured bone takes place. He then refers to a case of a marine with a fracture of the leg 17 weeks old, and still ununited. The man appeared to be in perfect health, and never had had any venereal infection. Camphorated mercurial ointment was locally applied until salivation was induced, when the callus speedily formed. So common is this treatment, according to him, that he does not think it worth while to dwell upon it. (*Op. citat.* p. 118.)

An interesting case of this kind, (in which, however, the treatment was complicated by the use of pressure, effected by a well-padded leather girth firmly applied around the seat of fracture,) is reported by Bransby Cooper. Mr. Cooper administered the mercury at the suggestion of Mr. Colles of Dublin, who had been struck with its effects in the Dublin Hospital. It was a fracture of the humerus near its middle, of six months standing, in a healthy female 28 years of age. Friction, the immovable apparatus, and the seton had severally been tried and failed. Hydrarg. cum Calc. Carb. gr. iv, ter die, was prescribed, and the leather girth directed to be worn. Salivation was produced; and when at the end of a month, they removed the girth, the bone was found to be perfectly united. (*Guy's Hosp. Reports* for 1837, p. 400.)

Dr. Hays has favoured me with the outlines of an interesting case in which constitutional treatment, combined with pressure and rest, effected a cure. Eliza Able, ætat. 26, entered Wills Hospital for the Lame and Blind, September 7th, with a fracture of the humerus of six months' standing. Friction had been employed without effect. Dr. Littell, under whose care as the then attending surgeon, she for a short time remained, produced an eschar three inches long by one wide with the potash on the arm over the seat of injury. The cauterised surface became a troublesome sore which required considerable attention, and occupied some time in cicatrizing. No material change in the relation of the bones was manifested. When she came under Dr. Hays's charge, on the first of October, he found that she was labouring under considerable constitutional derangement with disorder of the menstrual function—this discharge being irregular, and when present accompanied with severe pain, (dysmenorrhœa.) She also had leucorrhœa. He treated her for these complaints; and among other internal remedies, administered first iodine, and afterwards carbonate of iron in combination with quinine. At the same time, pressure and rest were maintained, the limb being dressed with an angular splint reaching from the axilla to the finger ends. The girl was discharged perfectly cured on the 31st of December following.

The *local remedies* are medicinal, medicinal and mechanical, or solely mechanical. They consist in, Irritating applications to the tegumentary surface in the vicinity of the joint, such as rubefacient liniments, tinct. iodine, lotion, douches, blisters, and escharotics. Irritating injections thrown into the cavity of the joint. Shocks of electricity passed through the seat of disease. Friction of the separated surfaces against each other; friction and pressure with exercise, constant pressure and rest. Exposure of the joint and irritation of the articulating surfaces and surrounding parts. Irritation of the joint with slight exposure by means of a long sharp-pointed instrument passed obliquely through the flesh down to the ends of the fragment. Introduction of artificial heat into the joint by means of a rod previously held in boiling water; cautery, actual and potential to the articulating surfaces; rasping of these surfaces; resection of the ends; resection of the ends, and binding together the fragments with a silver wire; lastly, the seton and its modifications.

All of these have been tried singly; and some in combination with each other, and with general remedies. Each with, perhaps, one or two exceptions, has its advocates who place it first on their list and point to their success with it in support of its claims.

External irritation has long been familiar to surgeons as the means of at least accelerating the deposit of callus. Paré recommended gentle frictions and fomentations with warm water, irritating plasters and "other things which customarily are used to members troubled with an atrophia." (*Loc. citat.*) He is very particular in directing the suspension of these when the parts begin to "grow hot and swell" lest they produce the opposite effect from that intended.

Heister also advises us to rub the limb well with hot cloths, spirituous medicine, aromatic lotions, &c., &c. Duverny tells us, that induration may be assisted by lotions of aromatic wines, and by the application of compresses moistened in them and retained by a bandage.

The Iodine lotion is of more recent date. It was proposed and successfully employed in the form of tincture, by Buchannan. Mr. B.'s first

case, was that of an oblique fracture of the bones of the leg, of 46 weeks standing, in a young man of excellent health and strong constitution. There was much displacement and overlapping of the fragments. After six months ineffectual trial of pressure and exercise of the limb, as recommended by J. Hunter, according to Sir E. Home, he proposed resection, but being overruled, finally determined to try the tincture of iodine. At this period, says the author, it was with the greatest difficulty and extreme pain that the patient could drag himself along with a staff. The limb was considerably swelled particularly below the fracture; and if when attempting to drag himself along he touched a stone or the least elevation in the path on which he was walking he was put to the most excruciating torture. The limb was shortened two inches and could be rotated to 8 inches at point of fractnre. April 16th. Applied tinct. to the limb particularly about fracture and parts around the ankle, and in three days the pain and swelling were removed. Patient took decoct. dulcam. ℥ii. t. d., which, by the bye, he had been taking from the outset. Continued tinct. every morning until May, and then applied it only every second day. Parts became stimulated and deposited osseous substance; union took place, and in the month of August following he was dismissed cured, with the limb apparently stronger than before the accident. The author adds in a note that the patient walked, (supported by a staff,) to his surgery every time the medicine was applied, so that part of Hunterian method as he calls it, was employed in conjunction with his own. (*On a new mode of Treatment for Dis. of Joints and the non-union of Fractures*, Lond. 1828.) The tinct. of iodine has been tried with benefit, by Willoughby in America, (*Trans. of Med. Soc. of St. of New York*, vol. i, 1834,) and Trusen in Germany. (*Med. Zeitung*, 1834.—See Oppenheim.)

The mineral water douche to the limb around the joint was proposed by Rognetta (*Archiv. Gén.* 1834, vol. xxxv): he ranks it with vesication and cautery. It was suggested to him by the account of Monteggia, (*Instituzioni Chirurg.* 1816, vol. v, p. 194,) of the experiments and observations upon the Springs of the Vardieri, of John Fantoni, an Italian Physician, who ascertained that the effect, upon animal matter, of these waters, when falling from a height, was much more penetrative and forcible than that of water of the same temperature in form of still bath. The spout baths of the Hot Springs, Va. U. S., which have long been noted for the relief of many chronic disorders, might be beneficial in this way. The waters of Barege and one or two others on the continent of Europe have the reputation of sometimes exciting the absorption of callus. Dr. Blutzke of Schwetz has lately shown, that the daily application for half an hour or an hour at a time of simple cold water descending upon the part from the height of six feet in a strong unbroken stream, is remarkably efficacious in the cure of old atonic ulcers of the feet; and even in herpetic ulcers and scrofulous caries of the lower extremities, one half the patients were cured by this douche. (*Amer. Journ. Med. Sci.*, Aug. 1840, p. 480, from *Med. Zeitung.*) Repeated vesication of the limb near the diseased part was proposed by Mr. Walker of Oxford in 1815, (*Lond. Med. and Phys. Journ.*, vol. xxxii, 1815,) and has since become a common and useful remedy in the tractable cases. It is said to have been resorted to for many years by veterinary surgeons in the management of analogous lesions of the bones of inferior animals. It was well esteemed as a moderately active and often very valuable therapeutic aid by Wardrop, Brodie, and others.

Escharotics externally applied in the region of the joint were introduced by Dr. Jos. Hartshorne of this city. (*Eclectic Repertory*, 1812, vol. iii.) He used the caustic potash for the first time in 1805. He rubbed it on the integuments near the seat of injury so as to produce a small superficial eschar with moderate inflammation; and by this means to excite the neighbouring parts. The case was that of a fracture of the external condyle of the femur, of four months' continuance. The man recovered the use of his limb in 20 days after the issue was created, although no previous treatment seemed to have had any effect. The second instance reported was a supplementary joint of the humerus five months after fracture, treated in the year 1811, for which pressure was used together with the alkali. In 1838 he was consulted in another case of supernumerary joint of the femur which was cured at his recommendation with the caustic and by pressure.

Possibly the moxa might be advantageously used in some cases where the bones are superficial.

The actual cautery has been found to hasten consolidation. Dr. Kirkbride tells us that it was applied with good effect to a fractured femur in the Pennsylvania Hospital. (*Amer. Journ. Med. Sci.* for Nov. 1835.)

External cautery appears to have been beneficial in relieving the patient of his infirmity when in such a situation as to render the prognosis as to ultimate recovery quite discouraging. Its success upon the femur and humerus—large bones deeply embedded in the soft parts, and therefore distant from the surface, would seem to show that it is superior in efficacy to vesication and other superficial applications, all of which are generally supposed to be inadequate, except where the bones are near the surface, and when the process of reparation has rather flagged than entirely ceased, or given way to another action. It has, moreover, the advantage of being available when, as in the case of jointed condyle, an operation would be contra-indicated by the proximity of a natural articulation or a large nerve or artery. Velpeau considers it like the rest of its class only adapted to the unconfirmed stage of the malady, and not sufficiently prompt and energetic in its operation to alter the disposition of the parts. (*Loc. citat.*)

Stimulating injections were proposed by Dr. Hulse of the U. S. Navy, (*Amer. Journ.* for Feb. 1834,) in supernumerary joints complicated with a fistulous opening. He effected a cure in two months of a case of this kind, in which port wine and water, salt and water, and a solution of sulphate of copper were successively employed. A solution of iodine is recommended by Dr. Norris as probably the best injection for this purpose.

Electricity was adopted by Mr. Birch, one of the surgeons of St. Thomas's Hospital, in whose hands it was eminently beneficial. He informed Dr. Stevens of New York, on whose authority these statements are made, that it had never failed with him. "One of his dressers, with whom I was intimately acquainted," says Dr. Stevens, "saw two cases in which it produced the most happy effect." "One of these patients," continues Dr. S., "whom I afterwards visited during his illness, entered St. Thomas's Hospital, in the month of January, 1812, with an unconsolidated fracture of the tibia, below the middle, of 13 months' standing. The leg below the fracture could be easily moved in any direction, and without exciting much pain. Shocks of electric fluid were daily passed through the space between the ends of the bones both in direction of the length of the limb and that of its thickness. The man being somewhat weak used

bark and porter at the same time. The leg was retained in the ordinary fracture dressing. Improvement was very perceptible in two weeks, and in six weeks he left the hospital cured." (Append. to *Trans. of Boyer*, note A.)

The remedial measures that we have just described, together with friction and pressure, (with either or both of which they may be sometimes advantageously associated,) form a class of themselves, some of which, according to his own views, the surgeon first tries in his efforts to bring about the union of an indolent or chronic fracture, before he makes up his mind to resort to more formidable expedients. Accident may induce what these latter are designed to effect. Seerig relates a case, in which the patient who had refused all treatment, was attacked unaccountably with an erysipelas of the limb; this soon produced the restoration of its bony continuity. Erysipelas has been observed, in the Pennsylvania Hospital, to operate in a similar manner, (Kirkbride, *Amer. Journ. Med. Sci.* for Nov. 1835.) Wardrop tells us of a sailor in whom a fracture of the humerus evinced no disposition to unite until three weeks after the injury, when he happened to fall and severely bruise the limb; after which, union rapidly advanced. (*Medico-Chirurg. Trans.* vol. v, 1814.) Amesbury reports an analogous incident. A gentleman had a fractured thigh in which no union could be established: several months after his mishap he was thrown out of his gig, and the wheel passed over the limb at the fractured part. He was confined after the second accident, which was followed by high inflammation; and now the fractured bone united. (Amesbury, *Op. citat.*) Meeker narrates an interesting case, the following sketch of which is condensed from his account. A lady fractured the radius of her right arm. Through the inattention of her physician, who did not suspect a fracture, a supernumerary joint was allowed to form, which rendered the use of the limb difficult and painful, unless it was supported by a roller. Nearly four months after the reception of the injury, she unexpectedly met with an intimate friend, and forgetting herself, in the joy of the moment, she gave him her right hand; the cordial shake which it received, produced such excruciating pain from the friction of the two ends of the bone, at the point of separation, as to cause an involuntary scream. The arm remained sore, and in a few days, slight lancinating pains were felt in the part, which continued for some time. At the end of three or four weeks, she was astonished to find the roller no longer necessary, the bone having firmly and securely united. (*N. Y. Physico-Med. Trans.*, vol. v, 1817.)

This is in fact the history of a case treated purely by the use of friction; of the operation of which it is a striking illustration. Forcible and, if need be, repeated attrition of the articulating ends of the fragments, until inflammation sets in, is the most simple and, excepting pressure, the safest of the strictly chirurgical remedies for supernumerary joint. It was recommended by Celsus, (lib. viii, cap. x,) and is the oldest among them. It does not appear to have been much thought of, until Mr. White, of Manchester, recalled the attention of the profession to it, and urged its merits. Duverney, early in the last century, spoke of it as recommended, but considered it, to use his words, "only good in the study, for, however the whole end of the cemented bone be rubbed, it is useless and even dangerous for the patient." (*Op. citat.* p. 176.) Friction was stigmatized also by Boyer as extremely improper, where the consolidation was not definitely suspended; because it retards the process of nature by

breaking up the callus already deposited; and as futile in a confirmed supernumerary joint, while it leads to serious accidents by tearing the adjacent soft parts. (*Op. citat.*, tome iii, p. 106.) These theoretical objections have not been sustained by later observations. We know of no instance in which serious consequences have resulted from the employment even of some violence in rubbing the bones upon one another. Boyer's strictures are chiefly levelled against what would be manifestly an abuse of the remedy. It would certainly be wrong to continue the repetition of the friction after a decided irritation was produced; or to omit to enforce the most perfect quietude immediately and for some time after the symptoms of high action had appeared.

The case of Dr. I. Parrish, and those of Dr. Kirkbride reported in Nos. xxviii and xxx of the *Amer. Journ. of Med. Sci.*, are well marked instances of its successful employment. Sanson brought about consolidation in a femur obliquely fractured and much shortened, that had remained ununited for more than a year, merely by the friction incident to the reduction of the fragments which overlapped each other five or six inches. (*Dict. de Méd. et de Chir. Prat.*) Derricagaix cured in 40 days a supernumerary joint of the leg of six months duration, by violent friction of the surfaces. (*Recueil Périodique de la Soc. Méd.*, tome ix, p. 314.) Steinheim relates a cure of a similar joint of the femur by the same means. (*Med. Zeitung.* Oct. 1834.)

White, of Manchester, firmly enclosed the thigh in a leather girth adapted to the whole limb from the patella to the groin, and then directed the patient to make some use of the limb in moving about. He thus combined pressure with exercise of the limb, and with great friction. The patient thus treated was ultimately relieved, but not without much trouble, on account of an abscess that formed in the joint, and prostrated him to an alarming degree. (*Op. citat.*, p. 76.) This method was recommended by John Hunter and Sir E. Home. (Brodie, *Op. citat.*, p. 57.) Inglis adopted it with advantage in 1805. (*Edin. Med. and Surg. Journ.* vol. i.) This gentleman made considerable pressure by means of a roller and a tin plate. Brodie has known the best results to follow, where patients who have been confined to their beds for 10 weeks or more, without consolidation of their fractures, have been permitted to hobble about on crutches, and subject the maimed limb to the weight of the body after having had it protected with a sustaining apparatus. According to Oppenheim, (*Op. citat.*,) Professor Kluge, of Berlin, allowed his patients to use a limb, if it remained flexible after the lapse of the period usually occupied in restoration; and in the event of inflammation remanded the individual to his quiescent state. In every instance, a quick and firm consolidation resulted without suppuration. Malgaigne tells us that Boyer, and also Briot, in France derived full success in several cases, from this mode of treatment. (*Méd. Opérat.*, p. 248.) Velpeau states that he has often resorted to it, and quotes MM. Champion and Jacquier d'Ervy in its behalf. (*Op. citat.*, tome ii, p. 583.) "It is generally thought," says Sanson, in reference to friction, (whether simple, or combined as just described, for he makes no distinction,) "that this means, much as it has been approved by distinguished men, and in despite of the examples of cures obtained by it, in our possession—suits only in the preliminary stage of the organization, and when the fragments correspond end to end. It seems, indeed, that it must make little impression on the articular cartilages of the new formation once

fully developed, or on the fibrous substance sometimes serving to connect the bones. (*Op. citat.* p. 500.) Oppenheim and Amesbury in some degree concur with him in these views. He admits, however, that it sometimes happens, that even when the fragments correspond only by the side, a very slight rubbing suffices to dispose them to reunite; and instances the case in point which we have already quoted. Dr. Norris exhibits in his tables the analysis of 10 cases, all of which were cured in the manner just discussed.

Greater benefit has been alleged to accrue from the employment of firm and regular compression associated with rest, which has been so pre-eminently useful in the hands of Mr. Amesbury. If not the originator of this method, Mr. Amesbury has done a great deal towards establishing it as an independent and important mode of treatment. This gentleman's array of successful cases (to the amount of 16 out of 17 detailed, besides many others not enumerated,) in his own practice affords strong support to his position in relation to the superiority of his treatment. It has found staunch advocates in Brodie, Lonsdale, and others, in Great Britain, and Wright, of Baltimore, in America, each of whom has repeatedly satisfied himself of its favourable operation. It has also succeeded in France and Germany. Dr. Norris's summaries present 23 cures and 1 partial cure out of 28 cases treated in this manner. The compression of the fragments and their comparatively perfect rest in close apposition, are effected in various ways according to circumstances and the preference of the operator. The common roller, padded splints, compresses, and the tourniquet constitute the materials of an excellent apparatus always at hand. Mr. Amesbury is in the habit of using the fracture machines invented by himself, by which he can press the fractured surfaces in any direction against each other, at the same time preserving them from the slightest motion.

The simplicity, ease of application, slight inconvenience, as well as perfect safety of this plan of treatment, no less than the amount of evidence in favor of its efficiency have gained it an extensive adoption. Some persons are ready to believe it destined to supersede the seton and all the severer remedies. Nevertheless, it is not without strong opponents; Liston among others decries it as useless, and Oppenheim thinks it the least applicable plan, because where it has cured, the same end could have been achieved by less troublesome and tedious means. When, continues this author, no cure follows, the condition of the patient is not, as Amesbury, Brodie, &c., declare, the same as previously. For, besides the loss of time incurred, the disease is materially exacerbated, the joint being actually more strongly developed. He asserts that the expedients of Mr. Amesbury are only capable of fulfilling completely the indication to keep the fragments quiet in their respective places, and can but very partially and uncertainly create the inflammation, which he (Oppenheim) considers so vitally essential to the renovation of the bone. Nor does he forget to remind us that Brodie himself confesses that frequently no fresh inflammatory action is excited, and that he has met with cases where no union had occurred at the conclusion of the treatment. Velpeau also insists on attributing the success of pressure and rest, especially as practised by Wright, merely to the more complete immovability of the limb secured by the instruments adopted. Amesbury himself has been disappointed in some instances, and acknowledges that his method is not to be relied upon in certain cases. It is apt to be inert on a loose joint with a thick adventi-

tious capsule, or where there is a considerable mass of condensed cellular and chondroid membrane between the fragments. There are instances also in which the displacement of the fractured ends is so great as to put the use of pressure and rest out of the question. But there are other cases to which it seems peculiarly adapted; such are those where there is a large and irregular callous tumour, together with angular displacement or extensive overlapping of the bones. Examples of these deformities, in which splints and the tourniquet were employed with the most gratifying results are reported by the author of the treatment, as well as by Brodie, Syme, &c., &c., and still more recently by Norris in the Pennsylvania Hospital of this city.
The following data are taken from the summaries appended to the very valuable unpublished statistical tables of Dr. Norris, to whom our readers are already indebted for other interesting matter of the same nature.

Of the 28 cases in which pressure and rest were used—

10	were on the	Femur	of which	8	were cured.
5	"	Leg	"	5	"
10	"	Humerus	"	7	"
3	"	Fore-arm	"	3	"
28				23	

The longest period that the fracture had existed in the above cases was 66 weeks (femur.) The shortest was 4 weeks, (fore-arm, ætat. 12.) The longest period required for the cure was 5 months, (humerus, ætat. 24.) The shortest was three weeks, (humerus, ætat. 53.)

We come now to the operations on the bones themselves. That of John Hunter, (if we except the seton as employed by Physick,) is the simplest. All that was necessary in his view was to lay open the cavity of the joint, and irritate the ends of the bone involved in it. (*Principles of Surgery*, Palmer's ed. vol. I, p. 504.) Brodie (*Op. citat.* p. 57,) cites a case in which this was successfully resorted to by Sir E. Home. The editor of Hunter's Surgery (*Loc. Citat.*) states in a note that this operation had lately failed in two cases at St. George's Hospital. Sir C. Bell proposed to effect the requisite irritation with the smallest possible external opening by the aid of a long and sharp instrument to be pushed obliquely down upon the bones. "By this means," said he, "I imagined the wound made by the transit of the instrument would immediately heal, and yet the extremities of the bone be so excited as to resemble the state of simple fracture more than could possibly happen after cutting down upon and sawing off their ends. (*Operative Surgery*, vol. II, p. 326.)

Hot Iron.—Mayor, in a case of obliquely fractured femur of 7 months standing, and in which friction and pressure had proved unavailing, succeeded in stimulating the bony surfaces and surrounding tissues into a disposition for reunion, by subjecting them to heat through the agency of an iron rod heated to the boiling point of water. The canula of a large trocar was introduced between the oblique ends of the fragments, and left 8 hours in place. Through it a stylet of iron which had first been held in boiling water was repeatedly passed. (*Nouveau Syst. de Déligat, Chirurg.* 1838, p. 304.)

Escharotics.—White, of Manchester, in his second case of resection rubbed the new surfaces of the bone with the butter of antimony. Mr.

Cline was probably the first to use caustic applications to the fragments without previous excision of their ends. Since then it has been employed by Greene and others in Great Britain, by Hewson, Barton, Harris, Kirkbride, Norris and others in America; and, according to Oppenheim, by Ollenroth and Weilinger in Germany, and Mayor in France. Fuming nitric acid, caustic potash, butter of antimony and nitrate of silver have been severally tried. Hewson in his case removed the dense cellular membrane connecting the fragments, with a knife before he touched them with the alkali. Norris's case was the sequel of an oblique fracture of the humerus near the condyles, attended with overlapping. The joint was very loose and had existed four years, during five or six months of which friction was persevered in without avail. The transmittal of a seton between the fragments, proposed as the next most promising plan of procedure in this case to friction was rejected in consultation, owing to the close proximity of the ulnar nerve and humeral artery, as well as the elbow joint, to the course it must have taken through the injured part; and because the records of surgery exhibit many failures of the seton in cases of long standing. "In these latter cases," continues Dr. Norris, (whose language we have endeavoured to preserve as nearly as practicable, in the foregoing and succeeding passages,) "excision of the ends of the bone, or the application of caustic after free exposure of it are the means most to be relied upon. The first of these, besides, being a much more formidable operation, and productive of more pain and danger than the latter, would have been in the highest degree difficult, if not altogether impossible, in the case before us, from the nearness of the false joint to the elbow." The seat of the previous fracture was laid bare—the thickened cellular substance connecting the two ends of the bone was then cut through, and the wound carefully dried; after which caustic potash was freely rubbed over them *until a black eschar was formed.* The limb was dressed and treated as for a compound fracture. With the exception of one or two attacks of hæmorrhage attributed to idiosyncrasy, no bad symptoms presented; and in about three months the bone had become perfectly firm. (Report of Surgical Cases, at the Pennsylvania Hospital, *Amer. Journ. Med. Sci.*, February, 1839.)

Rasping.—Cutting down upon the fragments, scraping the opposing surfaces, approximating them and treating the injury as a compound fracture, was a method known to the Arabian physicians. Avicenna declares, that Hali Abbas witnessed the death of a philosopher in consequence of such a mode of treatment. Guy de Chauliac blames this philosopher for having acted very foolishly, in not contenting himself with his lameness. (Boyer, *Malad. Chirurg.* vol. iii, p. 105.) This operation was performed by Vincent in London on a joint of both bones of the fore-arm. Death followed on the fifth day. (*Lancet*, vol. xiii, 1827.) Scraping the ends, and retaining lint between them was practised with a more fortunate issue by Brodie in 1834. (*Lond. Med. Gaz.*, July, 1834.)

M. Barthelemy suggested that the ends of the bone should be scraped by a rasp in the form of a saw, conveyed down to the fragments by means of a canula. (*Velpeau, Op. Citat.*, tome ii, p. 588.) A Dutch surgeon, named Vander Haar, according to Oppenheim, "very unwisely" proposes the exposure of the articulating surfaces, scraping them with the trephine, and then covering them with the butter of antimony, as the only remedy, except resection capable of accomplishing a restoration to health.

Resection or Excision of the Ends of the Fragments.—This is confessedly, one of the most dreadful operations in surgery. Boyer believed that it was familiar to the Arabian physicians, and based his opinion on a passage which he refers to in Avicenna. Dezeimeris, although he asserts that Boyer misinterpreted this passage, informs us that, in another place, Avicenna does describe the operation. (Dezeimeris, *Dict. de Méd.*, tome xiii, p. 500.) Be this as it may, there is a case described by J. L. Petit, (*Dis. of Bones*, p. 358,) in which that surgeon effected union in a fracture complicated with caries by removing the carious portions of the jointed bone and subsequently applying the actual cautery to its diseased extremities. But to White, of Manchester, is unquestionably due the merit of having introduced resection in modern times, and made it a distinct and definite radical operation. He cut down to the bones upon their most accessible side, carefully avoiding large nerves, arteries, &c., exposed, and if necessary, turned out the ends of the fragments and removed them by means of a saw. Then readjusted the fragments, bringing together the raw surfaces as in the operation for hare-lip, and afterwards treated the wound as a compound fracture. The details of the operation as to the mode of performing it, the instrument (chain saw, &c.) used, and the amount of bone removed have varied from time to time in different hands; but the general characteristics are essentially the same in every instance. In his second operation, White contented himself with excising one extremity, merely irritating the other. Inglis, Dupuytren, Syme, and others, have followed his example, and have in this way more than once considerably diminished the difficulties, sufferings, and dangers of the operation without sacrificing its efficiency.

Such is the character of resection, as one of the gravest operations, that few surgeons of the present day are willing to undertake it under any circumstances, without considerable hesitation. The majority regard it as, at best, but a last resort in preference to amputation, and only to be attempted in the most promising cases, and at the urgent solicitation of the patient. Some writers on the subject reject it altogether. Among them are Boyer, Richerand, Larrey, C. Bell, Wardrop, Brodie, Amesbury, Liston, Oppenheim, &c.; and Physick, Dorsey, Gibson and others, of this country, all of whom oppose it on the ground that it is tedious, painful, often extremely difficult, and apt to be followed by a reaction so violent as to expose the patient to great suffering and danger for a length of time, if it do not involve his life. While in the end, a cure cannot be confidently looked for, and at all events, must generally be expected only at the expense of a shortened limb. Sommé denounces it as barbarous; and describes a case witnessed by himself, in which, after a tedious and very difficult operation, long confinement, with free suppuration, troublesome hæmorrhage, and great trouble in keeping the bones in place, no union was obtained.

Rowlands, of Chester, England, after having successfully performed the operation on the femur, remarks, "Though I have several times performed all the principal operations in surgery, and many of them very often, I confess this far surpassed any thing I had ever undertaken or witnessed, and I am doubtful as to the propriety of recommending it to others." (*Loc. citat.*)

Gouraud calls it a retrograde step in surgery; Velpeau, from whom we quote Gouraud's opinion, in speaking of the very serious nature of re-

section, refers to a case given by Vallet on the authority of M. Gable, of an excision of the two extremities in a supernumerary joint of the femur. The operation was bloody, and lasted more than an hour; the patient, who was young and vigorous, had convulsions, and died in the evening. (*Méd. Op.* p. 589.) The number of published failures as given by Oppenheim, Velpeau, Norris and others, even supposing there were no unsuccessful cases, all accounts of which have been suppressed, show that a large proportion of the trials of this remedy have disappointed the operators, while some of them (not a few, considering the little real necessity for incurring the risk) were fatal.

Resection has been performed by many distinguished surgeons, on both sides of the Atlantic. They have at different times made each of the long bones of the extremities, also the inferior maxillary bone, the subject of it. Oppenheim, in summing up the cases of supernumerary joint, known by him to have been treated in this way, found that of 37 cases, 21 proved successful and 16 fruitless, 4 of the latter having been fatal; 17 out of the 37 were joints of the humerus, 6 only of the 17 recovered, and 3 died. Dr. Norris has made an abstract of the general results of 28 cases, (many of which are also included in the summaries of Oppenheim,) which is, however, more favourable to the operation. 20 of them were cured, 1 partially cured, 3 were not benefitted, and 4 died. Of these,

9	were on the	Femur,	of which	6	were cured.
4	"	Leg,	"	3	"
8	"	Humerus,	"	6	"
6	"	Forearm,	"	5	"
1	"	Jaw,	"	1	"
28				21	

The longest period that the fracture had existed in the above cases was three years, (lower jaw.) The shortest do. was three months and twelve days, (radius, ætat. 26.) The longest period required for the cure was thirteen months, (femur, ætat. 26.) Shortest, one month, (forearm.)

According to the appreciation of Velpeau and some others, excision of the ends is the only efficacious remedy in disease of the bone, such as hydatids, caries, necrosis, &c., and in old fractures where the extremities of the fragment have become engaged in the soft parts so as to prevent their reduction and coaptation. At all events, says Velpeau, (*Op. citat.* tome ii, p. 592,) we ought never to decide upon it before having well weighed the dangers. Obliging us to penetrate even to the centre of the limb, to separate and dissect the flesh to a considerable extent, it transforms the affection into a recent complicated fracture, with a deep wound; whence the risk of suppuration, erysipelas, inflammations of every kind, caries, necrosis, and even of purulent infection and phlebitis. This advice is to the same effect as that given by Sanson and Vidal de Cassis, and accords with the views entertained by the greatest number of good surgeons. Yet Hammick and a few others continue to regard resection as the only efficient remedy in cases requiring any operation.

Dr. J. Kearny Rodgers, of New York, has increased the complexity of the operation and the after treatment, and enhanced their dangers by not only excising the ends but drilling a hole in the extremity of each frag-

ment, through which he passes a silver wire to bind the bones together. Dr. Heard reports a case of supernumerary joint of the humerus, another of the radius, and a third of the femur, for which this mode of treatment was resorted to successfully in the New York Hospital. He also cites a successful operation of this kind upon the humerus, by Dr. Mott, and another on the humerus by Dr. Cheesman, but gives no particulars. The first case reported by Dr. Heard was that of a lad of fifteen, who had fractured his humerus two inches above the elbow, more than two years before. He had worn the seton seven days at one time, and six months at another, without benefit. On the 31st of July, (1827,) Dr. R. removed half an inch of the extremity of each fragment, but finding it difficult to retain the fragments in apposition after having with some trouble reduced them, he drilled a hole into the medullary cavity through the shell of each end; through these holes a silver wire was passed, and the ends of the bone retained in coaptation. The ends of the wire were drawn through a canula which remained in the wound. On the sixteenth day the canula fell from the wound, with the loop entire; the bones, however, continued in proper position. The arm was not examined for a month; during this time the wound had almost healed. Union was found to have taken place in sixty-nine days. Patient was not allowed to leave his bed for two months after the operation. The arm was two inches shorter than its fellow. Case 2d, was a German, ætat. 26, with a joint of the radius two inches above the radio-carpal articulation. The ends of the fragments were removed with the bone pliers. A hole was now drilled into each extremity; and a silver wire being passed through, the bones were approximated by twisting this, the ends being allowed to hang from the wound. The wire came away with the loop entire on the thirteenth day; union was complete in eighty days. The third case was an interesting one, presenting in the previous accident an unusual assemblage of severe and complicated injuries. A man, ætat. 28, of strong constitution and perfectly temperate habits, was brought into the hospital with a compound fracture of the bones of the forearm; a compound fracture of the bones of the left leg; a fracture of the right os femoris, near its middle; and severe and extensive lacerations and contusions elsewhere, on the head, trunk and extremities. The fracture of the leg united in eight weeks; union also took place in the fore-arm. Nine months after the receipt of the injury, resection was performed upon the thigh by Dr. Cheesman. The fragments were reduced by the aid of powerful extension and counter-extension, and retained in apposition by means of the twisted silver wire. The operation occupied one hour and a half. The limb was dressed as in the other cases, with an appropriate apparatus. An attack of erysipelas followed this operation, with the exception of which the patient did well. The wire having nearly made its way out, was removed on the 69th day, the bone apparently united. Perfect union was found to have taken place on the 95th day, with the limb two inches shorter than the other. (*Heard on Ununited Fractures, N. Y. Journ. of Med. & Surg.*, Oct. 1839.) Resection and the wire suture have been recently tried with satisfactory results in France, by M. Flaubert, of Rouen, upon a supernumary joint, in which the fragments could not be kept in contact. "The idea," says Malgaigne, who notices the case, "appears to me very ingenious, and susceptible of many other applications." (*Méd. Opérat.* p. 249.)

Liston has discountenanced this operation as more apt to lead to necrosis

than to consolidation of the fragments. His objection, that it is too artificial and liable to produce necrosis by the exposure of the bones, and their greater or less denudation of the periosteum, still appears, we confess, extremely plausible, notwithstanding the counter representation of Dr. Heard. A greater number and variety of instances of success than even the well marked ones already quoted, we think, are needed to establish an operation so adverse to all our theoretical notions, and withal, so full of pain and peril. If the wire be intended solely to retain the fragments in apposition, it might be asked whether this indication may not be fully met in the great proportion of instances, by the aid of a proper apparatus without necessitating the recourse to such a painful, hazardous, and not positively certain expedient. This method is liable, in the fullest extent, to all the objecjections preferred against resection, while the data are insufficient to determine its superior efficacy. The idea of employing wire to connect the fragments of a broken bone, whether after resection or without it, is not by any means new, as supposed by Dr. Heard. M. A. Severinus long ago proposed to freshen the edges of the fragments of an ununited patella, and then to tie them tightly against one another. (Velpeau, *Op. citat.* tome ii, p. 591.) The *Journ. de Med.* (par Roux, tomes xliii, xliv, xlv,) for 1775, contains a violent controversy between two surgeons of Castres, named Icart and Pujol, respecting an operation to approximate the fragments of a broken bone, and to bind them together with a leaden or silver wire. Jeart maintained its feasibility in certain cases, which he describes, and states that he has seen it performed with success. Pujol strongly condemns it, and asserts it to have been fatal in one instance. In 1818, M. Dupuytren employed platina wire in this way, (though without passing it through the substance of the bone,) in a supernumerary joint of the lower jaw of nearly three years' standing. (*Leçons Orales*, tome iv, p. 668.) He resected the posterior fragment, rasped the anterior, and secured the two in close apposition, by means of a platina wire passed around the teeth. The practice had been vaguely suggested in 1805, by M. Horeau in a similar case. (*Journ. de Méd. Chirurg. et Pharm.*, in 40 vols., vol. x, p. 197, 1805.) Some three or four years since, a surgeon of this city attempted to produce bony union of a fractured patella, by passing a wire through a hole bored in the fragments, and thus binding them in apposition. Violent local and general reaction followed, and the patient succumbed on the fourth day. Malgaigne very recently treated a fractured patella with happier results, by means of a sort of very fine pointed iron clamps, so contrived as to be fastened together, while they firmly held the fragments by their points, (two to each clamp,) which had been pressed through the integuments into the substance of the bone. Although, as far as we are informed, no harm resulted from the last described experiment, we may confidently predict that few operators will have the hardihood to repeat either of them.

The Seton and its Modifications.—The honor of having first applied this invaluable remedy to the treatment of supernumerary joint is well known to belong to Dr. Physick. He used the seton for the first time in 1802, at the Pennsylvania Hospital. About three years after, the same instrument was resorted to with success in the treatment of a compound fracture of the thigh of long standing by Baron Percy at Augsburg.

The new application of this well tried therapeutic instrument was hailed upon its announcement as a brilliant improvement in modern

surgery, and welcomed as the long desired substitute for the more sanguinary measures. It has been tried by many surgeons, and with various success. Like all remedies, and especially like the remedies for this infirmity, to all the varied characters of which no single one has yet been found to be adapted, it occasionally fails. Yet it still maintains a high reputation as more rational than the other remedies in which the knife is resorted to, because it is simpler, less difficult, less painful and safer than either of them; while it is as often, if not more frequently effectual. It is extolled by Allan, Wardrop, S. Cooper, Liston, Mayo, Rognetta, Weinhold, Portal, Oppenheim and others in Europe, and by Physick, Dorsey, Mott, Gibson, Hays, and others in this country. On the other hand, Boyer, Zang, Brodie, Hammick, Amesbury, Lawrence, &c., decry it as, at best, of doubtful utility. The last named authority condemned it without reserve as an abandoned operation, which had been performed some two or three times with indifferent success. In answer to this "cavalier dismissal" of a well established mode of treatment, Dr. Hays soon afterwards published in the *American Journal of Med. Sci.* for November, 1830, a very interesting and valuable summary of 13 different cases successfully treated with the seton, which he collated from the works in his private library alone without any more extended research.

Oppenheim prefers the seton to resection, 1st, because it cures generally without shortening. 2d, because it produces a less prejudicial constitutional and local impression, and can never endanger life. He remarks, that on account of its mild influence, it has hitherto been employed in a number of cases in which it was not clearly indicated; as for instance, where the fragments were united by a broad cartilaginous mass, or by a genuine artificial joint, *i. e.*, a bursal structure. In regard to this, experience has shown that the common seton is not always to be relied upon in supernumerary joints of long standing, still less useful can it be in cases (comparatively speaking not very rare) in which the disposition of the fragments in the soft parts, is such as to prevent their requisite approximation. In the first mentioned class of unpromising cases, the modifications of Oppenheim, those of Gulliver and Rhynd, or that of Sommé, each of which will be noticed directly—may be found useful by the practitioner. Dr. Physick himself discouraged its use in supernumerary joints of the thigh, and he has, in some instances, advised against it in similar joints of the bones of the leg. Two of the instances of ill success in the application of the seton to the thigh, given by Dorsey, might, from his own account of them, be attributed in degree, at least, to the unfavourable disposition of the fragments. In his own words, "it was found impossible to bring the bones nearly together."—(*Dorsey's Surgery*, vol. ii, p. 117.) The summary of Oppenheim, (which, however, it must not be forgotten, is, like the others, quoted in this paper merely numerical, and to be received accordingly,) would seem to show that in the operation with the seton as well as that of resection, the greater number of failures have been met with on the humerus. Of 48 cases in which the seton was applied, 26 were cured, and 22 remained uncured; 2 of the latter died. The seton was tried in 16 cases of joints of the shaft of the humerus; only 6 of these were benefitted, and death followed in two instances of the remaining ten. From Dr. Norris's valuable statistics, for the use of which we must again express our acknowledgments, it appears that—Of 30 cases in which the seton was employed, 23 were cured, 3 partially cured, 3 received no benefit, and 1 died.

10	were on the	Femur,	of which	7	were cured.
5	"	Leg,	"	5	"
9	"	Humerus,	"	5	"
5	"	Forearm,	"	4	"
1	"	Jaw,	"	1	"
30				22	

Of these 30 cases, 14 are stated to have had an incision made down to the bone previous to the introduction of the seton, and 15 had it passed without a previous incision. Of the 14, 11 were cured, 2 amended, and 1 died. Of the 15, 11 were cured, 1 amended, and 3 failed. In one case included in the above 14, the seton was passed through a previous fistulous opening. The longest period that the fracture had existed in these cases was $2\frac{1}{2}$ years, (femur, ætat. 28.) The shortest, was 2 months, (humerus, ætat. 24.) Longest period that seton was allowed to remain in, was 13 months, (humerus, ætat. 48.) Shortest, 7 days, (forearm.) Longest period required for the cure was 5 months, (femur.) Shortest, 1 month, (leg, ætat. 24.)

These summaries include some of the cases treated by the modifications of the seton which yet remain to be noticed. It is well known that in the United States the seton has been so long considered a remedy of unquestioned powers, that it has proved successful in many instances, which the operators have not thought it worth while to publish. The probable number of such facts, known only to individuals, may perhaps be taken, at all events, to balance the weight of the failures which have been consigned to oblivion.

There are different modes of using the seton, as well as modifications of the instrument itself. Dr. Physick passed it through the joint by means of the seton needle alone, without a previous incision; and always preferred this mode when practicable. He was particular also in directing that the seton should not be withdrawn, for weeks or even months, unless the bony union be found to have fairly begun. A want of attention to this rule of practice has been suggested, as probably the occasional reason for disappointment in the use of the seton. (*Dorsey's Surgery* and *Gibson's Outlines of Surgery.*) Liston, however, one of the strongest advocates of this remedy, entertains very different views. He would have us cut down upon the fracture, dividing the soft parts as little as possible, introduce a perforator between the ends of the bone, and turn it well round, then insert a seton, not caring that it should go exactly betwixt the ends of the bone, because he would rather pass it over the surface of the broken ends, and perhaps one on each side. Shake the limb a good deal about, and move the instrument rather roughly. The object is to excite a good deal of action; when that has been done, agreeably to his belief that the seton has done all the good that possibly can be attained by it, and that by remaining longer in the wound it would weaken the powers of the part, he withdraws it, and directs the ordinary treatment for a recent fracture. By this process, and also by increasing the size of the seton, and smearing it with a stimulating powder, (Hyd. Oxid. Rubr.) he has succeeded in several instances. (Clinical Lectures on Fractures, *Lancet*, April 30th, 1836, p. 176.) Oppenheim, believing that the single seton was in many cases incapable of producing adequate reaction proposed to em-

ploy two setons, one lying in contact with each bony surface. In two cases of false joint of the humerus, in which he adopted this plan with the most gratifying results—in one of them the common seton had been fairly tried—he operated in the following manner. He made an incision on the outer side of the arm down to the bone, then, by a rotatory motion, passed a common prismatic seton needle through the mass of flexible substance immediately in contact with the surface of the lower fragment; next he drew repeatedly, to and fro through the opening just made, a thick silk seton, which was fastened on the forearm. The second seton was then applied in the same manner to the upper fragment, and fastened on the shoulder. (*Op. Citat.*) Prof. Weinhold, at Halle, proposed to increase the irritation, and, at the same time, protect the bones from the injurious influence of the air by a funnel-shaped wound and a wedge-shaped seton. A wound an inch long was made down to the joint, the connecting membrane having been perforated with a needle trephine, through the eye of which had been passed a piece of tape with the cuneiform seton appended; this last was drawn by means of the needle and tape, (which were brought out through the integument of the opposite side of the limb,) so as entirely to fill the vacant space between the extremities. He reports 3 examples of this method of treatment, 2 of them successful, the second a joint of the femur 10 years after fracture with caries and fistula, and a third fatal, owing to previous caries of the acetabulum. (*Med. Recorder*, Jan. 1828, p. 178.)

For a joint of the tibia, eight months after fracture, in May, 1838, M. Saurer passed a seton, not between the fragments, but around their margin at the breach of continuity. Having cut down to the bone internally and externally at the seat of injury, he introduced a seton, half an inch broad and somewhat curved, through the outer opening around the fractured portion of the bone, and drew it out through the internal wound; in less than three months after the operation the patient was well. (Oppenheim, *Op. Citat.*) In 1835, Mr. Gulliver proposed that, in the treatment of artificial joints if the seton be employed, there should be two, one of which should be placed around each fragment, at a *short* distance from the line of fracture, because it is in those points that the deposition of bony matter commences. More recently, Mr. Rhynd, of Dublin, instead of passing the seton between the disconnected ends, so directed it as to leave it in contact with a considerable portion of their circumference. He has twice employed it in this manner with complete success. (B. Phillips's *Lect. on Surg.*, *Lond. Med. Gaz.*, May 22d, 1840.) In 1828, M. Sommé, of Antwerp, produced the consolidation of an oblique fracture of the femur, the fragments of which overlapped and moved on each other six months after the accident. He employed a silver wire, used somewhat like the ligature in the treatment of fistula; and his object having been to excite inflammation on a larger surface than the seton could possibly affect, and to keep up the inflammation, actively changing the point of irritation. He passed a long trochar at first downwards on the inside of the upper fragment, and made it pierce the skin behind and a little to the outside; the trochar was then withdrawn, and a silver wire passed through the canula, and out at the posterior opening. The canula was then withdrawn, and, being replaced on the trochar, they were introduced again above and on the outside of the lower fragment, and made to issue at the same opening behind, leaving a loop in front. I then made an incision, continues Sommé, in front from one orifice to the other, made by the trochar, drawing the extremities of the wire through the wound, brought the loop between the fractured ends

of the bone and the approximated edges of the skin, with sticking plaster. The limb was kept at rest in a box so contrived, that the wound could be dressed without disturbing the fragments. At each dressing, he drew down the wire so as to depress the loop more and more into the flesh; no bad symptoms presented; and union was distinct six weeks after the operation. The wire was withdrawn five or six days after union had become evident, but before it had quite divided the soft parts which it encircled. The wound cicatrised in about two weeks. Three months after the performance of the operation, the apparatus was removed, and the patient got well with a considerable callous tumour but no shortening. (*Med. Chirurg. Trans.* vol. xvi, p. 43.)

In a case of jointed tibia thirteen weeks after fracture, Seerig affected union by a process somewhat resembling that of Sommé. He employed a seton, or ligature as Troschel calls it, composed of twelve threads, which he looped about the connecting membrane between the fragments, and daily tightened by means of a serre noeud of Græfe. A longitudinal incision two inches long, was made on each of the two sides of the tibia, parallel to the ridge of that bone, while the fragments were as much as possible separated from each other; then with a needle, curved like the letter S, he conducted the ligature around the interarticular mass. The ligature came away the sixteenth day; at the end of a month the external wounds were cicatrised, and two weeks after the consolidation was complete. (*Arch. Gén.* for Jan. 1839, p. 105.) We are not aware that either of these ingenious operations has been performed more than once.

The method of Sommé is favourably mentioned by Sanson and by Vidal de Cassis. Oppenheim regards it with respect, but naturally prefers his own modification. We would be glad to see the latter, as well as the methods of Gulliver, of Rhynd, of Sommé, and that of Seerig, subjected to the test of further experiment. They appear to be as rational as any of the plans hitherto in vogue, in which the knife is used, and may prove to be much more applicable to the majority of cases. Certain it is that neither the seton as at present employed, nor any of the various radical operations, have the slightest claim to be regarded as specific in the treatment of supernumerary joint.

"The result," observes Oppenheim, "of all the methods hitherto applied for the cure of this lesion is so unfavourable, that several of the most astute surgeons are fearful of recommending any of them. Larrey maintains, that in those cases in which a cure has been effected, the artificial joint was not very chronic, there had been no loss of osseous matter, the fragments were in contact, and, lastly, the patient was young. If union does not take place after bandaging, the application of oily and aromatic frictions, and quiet and regimen, the case must be left to nature. The patient by degrees becomes habituated to his lameness, which is gradually lessened by time and use, and, finally, the limb being enveloped in pasteboard, is of almost unlimited service. He instances five cases supporting his views. Boyer, Richerand and Palletta are not more favourably inclined to the methods usually employed."

We are not prepared, after a careful review of the history of the treatment of supernumerary joints, to take so discouraging a view of its uncertainty; but we cannot help feeling, in the highest degree, impressed with the great importance of giving more and more attention to the indications in individual cases, by which means alone can be determined the precise value of the different modes of treatment in each form of pseudarthro .

REVIEWS.

ART. XII. *Observations on the Diseases incident to Pregnancy and Childbed.* By FLEETWOOD CHURCHILL, M. D. Dublin, 1840, 8vo., pp. 463.

ON a recent occasion* we had the pleasure of introducing to the favourable notice of our readers, Dr. Churchill's "Outlines of the Principal Diseases of Females." The volume then under review included only such affections of the female as occur independently of gestation and parturition; in that now before us, which, strictly speaking, is a continuation of the same work, the author, in completion of the plan originally proposed, considers such diseases as are incident to pregnancy and childbed.

The same admirable method and arrangement which characterized the former volume, are adhered to in the present—the text exhibiting a concise view of all the leading facts connected with the pathology and treatment of the several maladies it embraces, while, in the form of notes at the foot of the page, are presented such confirmations and amplifications of the statements in the text as appeared necessary or desirable, together with references to numerous sources of additional information or more ext nded details.

The two volumes of Dr. Churchill form a very complete and comprehensive digest of the diseases peculiar to the female sex. While from the excellency of their plan, and the general accuracy of the views presented, as well pathological as therapeutical, they constitute one of the very best manuals we possess for the use of students; they will be found also, from the industry and care with which the author has collated the numerous authorities in relation to the several subjects of which he treats, and the amount of valuable matter the volumes contain, in a very condensed, but, nevertheless, perfectly clear and definite form, a desirable addition to the library of every practitioner. The volume before us is divided into two parts, the first of which treats of the Disorders of Pregnancy.

In the initial chapter of the first part, Dr. Churchill presents, very succintly, but, at the same time, with great clearness and distinctness, an account of the more striking and important of the local changes, and constitutional sympathies which are the results of conception and utero-gestation. This forms a very useful and appropriate introduction to a consideration of the pathology of those disorders which constitute the subject of the present portion of the author's outlines—the correct acquaintance with which will, in many instances, be not a little facilitated by a correct understanding of the several particulars here presented.

The second chapter, which is likewise introductory, comprises some very judicious general instructions for the management of pregnant females. We are pleased to find that Dr. Churchill altogether discountenances a ridiculous and even mischievous opinion which is still entertained and

* See this Journal for Aug. 1839, p. 394.

acted upon by many accoucheurs in this country; that, namely, the taking away blood and the administration of purgatives are demanded in nearly every case of pregnancy, entirely irrespective of the presence of any particular accidental circumstances, for the removal of which blood-letting or purgatives may be required.

"No doubt, I believe," Dr. C. very properly remarks, "now exists in the minds of well-informed practitioners as to the propriety of blood-letting when symptoms demand it, but the practice of taking away blood merely because a woman is pregnant, is strongly to be reprobated. It may injure some, do neither good nor harm to others, and will relieve those only whose condition requires it.

"Many writers object to the employment of purgatives (just as they do bleeding) altogether; and others give them systematically; the correct course is undoubtedly to avoid either extreme. The bowels must be free, and when nature is insufficient, we must have recourse to laxatives. The mildest which will answer the purpose is the best. An occasional dose of castor oil, electuary of senna with sulphur, (especially if there be piles,) or saline purgatives, in small quantities, will be found sufficient; or the patient may use the 'lavement' of warm water or gruel once or twice a day. This is peculiarly suitable when the stomach is irritable."

The very great importance of a regular condition of the bowels in pregnant females cannot be too strongly urged upon the attention especially of young practitioners. To maintain this condition a resort to occasional laxatives will very generally be found necessary in the latter months of gestation, when costiveness is almost invariably present, and if not obviated will not unfrequently give rise to an accumulation of fæces in the rectum sufficient to impede materially the progress of labour and prevent the free exit of the head, if it be not productive of even more dangerous results.

There is an objection, however, to the frequent use of castor oil—the article usually directed to pregnant women in this country—which is, that it ordinarily augments instead of diminishing the tendency to constipation, and, as we have generally observed, aggravates any hæmorrhoidal intumescence under which the patient may happen to labour.

The disorders of pregnancy are arranged by Dr. Churchill into three classes: 1. Local diseases of the sexual system; 2. Diseases arising from sympathetic irritation; and, 3. Diseases arising from mechanical causes. To each of which classes a separate section is devoted.

Of section 1, the first three chapters treat, respectively, of œdema of the labia—the intumescence arising from which is, in a few rare instances, so extensive as to interrupt the passage of the head of the child and interfere with delivery until the fluid is evacuated by punctures or incision—of pruritus vulvæ, which is occasionally experienced only during pregnancy, the female being entirely free from it at other periods—and of that form of vaginal leucorrhœa which would appear to depend upon an irritation extending from the gravid uterus to the lining membrane of the vagina and causing a morbid increase in its mucous excretion, which augmented excretion often persists during the entire period of utero-gestation, but ceases soon after delivery.

In relation to each of these subjects, Dr. Churchill has given a very satisfactory outline of the present state of our knowledge, with the exception perhaps of the second, which is merely introduced with the view of presenting a case from Dr. Dewees, in which the pruritus was found, upon examination, to depend upon aphthæ of the vulva, os externum and vagina, and was speedily cured by a strong solution of borax in water.

The subject of chapter 4 is "menstruation during pregnancy." The whole of this chapter is particularly interesting—embracing a considerable amount of information on a curious and still contested question—occasionally one of some importance in a physiological point of view, and which may have a bearing on certain points of medical jurisprudence.

According to Dr. C. the cases on record are too numerous and too well authenticated to leave us in doubt that a discharge resembling the catamenia in colour, quality and periodicity, does, not unfrequently, occur during gestation. The authorities quoted in support of this statement are Mauriceau, Puzos, Stein, Deso meaux, Johnson, Belloc, Van Sweiten, Frank, Chambon, Gardien, Capuron, Röderer, Beck, Dewees, Blundell, Gooch, Kennedy, Montgomery, Burton, Hosack, Francis, and Velpeau.

In some of the instances referred to, the female is stated to have menstruated only once or twice after conception, when the discharge has entirely ceased—in others it persisted during four, five, or six months, or even during the whole period of gestation.

"I have myself," Dr. C. remarks, "seen three or four cases of this deviation from ordinary gestation. In one it continued regularly up to the eighth month inclusive; in the others it was arrested between the fourth and sixth months, but in all it was well marked, returning regularly, and varying but little in quantity and quality from the ordinary discharge.

"Still more remarkable and rare are those cases where the catamenia appear *for the first time* during pregnancy; (Perfect, Reid, Velpeau;)—or *only during* gestation, (Daventer, Baudelocque, Dewees.)

"The evidence of so many accurate observers," according to the author, "undoubtedly establishes the point in question. I shall, therefore, merely allude to Denman's opinion, because of his eminence in the profession. He doubts the occurrence of menstruation during gestation, never having seen a case, and explains away the cases on record. Dr. Hamilton, of Edinburgh, in his recent work, agrees with Denman.

"Some little variation is observed in the discharge—it is generally rather paler than the ordinary menses. The quantity is sometimes greater than usual, but more frequently less. In none of these cases is the discharge coagulable, or accompanied with clots.

"It does not appear that there is any risk of abortion or premature labour, the *symptoms* being ordinarily much milder than previous to conception. There may be some pain in the back, and a sense of weakness generally, but not so great as to incapacitate the patient. The recurrence of the discharge does not seem to produce much, if any effect upon the growth of the child, the majority are of the full size when born.

"In regard to the pathology of these periodic discharges of a bloody fluid during pregnancy, different opinions have been broached. Its seat has been supposed to be the lower portion of the uterine cavity, before the ovum has attained sufficient size to fill it, or from the vessels of the cervix, whether internal or external.

"I do not see," Dr. C. observes, "how the first opinion can be in accordance with the fact of the canal of the cervix-uteri being blocked up with mucus shortly after conception, or with the integrity of the *membrana decidua.* The second explanation appears to me to assign too limited a source to the discharge, though I question not that the mucous membrane covering the cervix may share with the vaginal mucous membrane the vicarious function. This view is rendered more probable by the circumstance that one of the patients, from whom Dr. Charles Johnson of this city (Dublin) removed the entire uterus, menstruated after the operation.

"As to the pathological *cause* of this deviation, it is more difficult to state any thing determinately. It appears to be owing to misplaced ovarian influence, and

to that habit or necessity of periodical discharge which gives rise to the other varieties of vicarious menstruation. It is neither more nor less easy to account for a monthly discharge of apparently menstrual fluid from the vaginal mucous membrane, than from the mucous membrane of the gums, the eyes, the ears, or from the surface of an ulcer.

"As so few symptoms attend this disease, and those few so slightly distressing, very little medical interference is required. The patient, to ensure safety, should be enjoined to preserve the recumbent posture so long as the discharge continues. Her clothing should be comfortable, but not too warm; her diet nourishing, but not too stimulating; and her occupations cheerful. An attempt has been made, in different ways, to arrest the discharge. Hippocrates advises the application of cupping glasses to the breasts. Whether as effectual for this purpose as for relieving amenorrhœa, I am unable to decide. Mauriceau and others, have advised bloodletting from the arm, but I believe that the general opinion at present, is in favour of a temporizing treatment."

In chapter 5, we have an account of "the discharge of a watery fluid from the vagina," without any apparent deviation from the healthy condition of the part. Among the most probable causes of this affection, are enumerated, an increased secretion from the vaginal mucous membrane; the discharge of the fluid collected between the chorion and amnion, or chorion and decidua, and finally, the escape of the liquor amnii, from an accidental giving way of the membranes, which, we are assured, may happen without bringing on labour. From remedial measures of any kind, but little can be expected in either of these cases. The brief outline presented by the author of the leading facts connected with this affection will be found altogether satisfactory.

"Excess of the liquor amnii, or dropsy of the amnion," is the subject of chapter 6. In those rare cases, in which the quantity of the amniotic liquor is greatly in excess, the principal inconvenience to the mother is the mechanical distress which is caused by it; the effects upon the child in utero are, however, much more serious; "it is," remarks Dr. Churchill, "either very feeble or diseased, when born at the full time, or dies before the completion of utero-gestation;—whether, he adds, the "injury arises from pressure, from the fluid being less nutritious, or from some other cause, it is difficult to say."

"Besides the inconveniences resulting from this disease during pregnancy, it sometimes occasions delay in labour, from the too great stretching of the muscular structure of the uterus—which, however, is easily remedied—and flooding afterwards, from a kind of paralysis from previous over distension, which interferes with the due contraction of the womb."

The disease does not appear to be much under the control of medicine; of the measures that have been used to mitigate the sufferings of the patient, to facilitate labour, and, after delivery, to prevent the recurrence of the disease in a subsequent pregnancy, a brief but useful summary is given by our author.

The ensuing chapter is devoted to the consideration of a highly interesting subject, namely—Rheumatism and Spasm of the Uterus. By the British and American physicians, the fact of the not unfrequent occurrence of rheumatism, or, perhaps, more strictly speaking, severe neuralgia of the pregnant uterus, has been very generally overlooked. In Germany, however, it has attracted considerable attention. The affection has been accurately described by Wigand, Carus, Schmidtmuller, Joerg, Velten, Haase, Betschler, Henne, Busch, and Witche. In a late number of *L'Experi-*

ence, Journ. de Méd. et de Chirurg., will be found a very able paper on the subject by M. Dezeimeris, in which he has quoted numerous cases, and presented an analysis of the labours of preceding writers. It is from this paper chiefly, that the very excellent summary of Dr. Churchill has been derived.

"Rheumatism," says Wigand, "may attack the fibres of the uterus, as well as the muscles and their sheaths, marking its presence, as in other parts, by pain, the effect of which is to impede the contractility and motion, by increase of heat, swelling, &c. Along with the rheumatism of the uterus, there sometimes exists a general affection of the same nature; but more frequently the uterus, its appendages, and the organs immediately surrounding it, are affected, owing to their great irritability during gestation."

It occurs most frequently towards the termination of gestation, when the uterus has acquired its maximum distension. Dr. Churchill remarks, that there can be but little doubt that many examples of what are called false pains, are, in truth, instances of this rheumatic affection of the womb.

Cold is laid down, probably, as its principal cause. The disease was remarked by Velten during a general epidemic of rheumatism.

In mild cases, the symptoms are sudden shooting pains in the region of the uterus, occurring in paroxysms, with intervals of more or less complete ease. In more severe cases, it may be preceded by headache, uneasiness, giddiness, and general irritability; the pain in the uterus being very severe and of a spasmodic character, with distinct contractions of the uterus, giving rise, during their entire continuance, to intense suffering. If neglected, these expulsive efforts have sometimes resulted in abortion or premature delivery. The irritation is generally propagated to the bladder, causing an urgent desire to urinate, the discharge being attended with pain. The intestines also, sometimes, sympathize with the womb, giving rise to colic or diarrhœa, or both.

"The motions of the child are a source of great torment, owing to the increased sensibility of the womb—and from some sympathy, (it may be supposed,) with the mother, it not unfrequently happens, that these motions are peculiarly lively."

According to Joerg, the child is less frequently injured by rheumatism, than by simple inflammation of the uterus.

Severe cases are attended with quickened pulse, hot skin, restlessness, and loss of sleep. Nauche states that the irregular contraction of the womb is sometimes extended to the limbs.

"When the affection occurs during parturition, the pains are, as it were, arrested; they become tedious, ineffective, and often sudden and interrupted, occasioning more suffering than usual. The patient is hot, thirsty, and irritable, unable to remain long in one posture—the pulse quick, and either full, soft, and undulating, or small and hard.—(*Wigand.*) The uterus becomes very tender, the weight of the bed-clo hes occasioning much pain. The sensibility may extend to its neck, rendering examination very painful.—(*Dezeimeris.*) During a paroxysm, the uterine tumour feels much harder than usual. If the case be left to itself, we shall find the pains become weaker, or even entirely suspended for some hours. If the patient should fall into a perspiration, and sleep, the natural pains will recur, and the delivery terminate favourably."

The prognosis is very generally favourable. Rheumatism is to be distinguished from inflammation of the uterus occurring during gestation, by

the pain in the latter being more localized than in the former. The paroxysmal character of the rheumatic affection, and its suddenness of accession.

The treatment consists principally in the use of moderate antiphlogistic measures, aided by sedatives and diaphoretics; the patient should be warmly clothed, and her diet light and nourishing.

"In a report by Professor Busch, of the Berlin Lying-in Charity, published about a year ago, it was stated," says Dr. C., "that in consequence of rheumatism of the uterus, it had been found necessary to induce premature labour. Such a case must be extremely rare, as I have met with no other on record.

"The treatment of the disease," the author adds, "when it sets in during labour, does not vary materially from that described above—bleeding, opiates, and sudorifics being our main resource. It appears that neither form is very obstinate."

A very excellent outline of the pathology and treatment of *hysteritis* as it occurs in the pregnant female is given in chapter 8. The author has availed himself advantageously of the labours of the German physicians, especially Joerg, Siebold and Busch, by whom the disease has been described with great accuracy. The references to the more authoritative writers who treat of this affection, appended to the author's text, will greatly facilitate the labours of those who desire to avail themselves of the facts already accumulated in relation to its pathology and treatment. It is somewhat remarkable, that a disease which is of by no means unfrequent occurrence, and the effects of which are always of a serious character, unless it be appropriately treated in its earlier stages, should have attracted so little the attention of the generality of systematic writers on the diseases of females.

The second section of the volume before us treats of disorders occurring during pregnancy from sympathetic irritation; and first, of those of the chylopoietic viscera. In the first chapter, an interesting outline is given of the subject of toothache, so frequently an attendant upon pregnancy. On the subject of extraction, Dr. Churchill remarks—

"It appears to me that extraction may be advisable, provided other medicines have failed, that the tooth is evidently diseased, and that there is no predisposition to abortion."

We would observe, however, that the young practitioner should be very cautious in advising the extraction of a carious tooth in a pregnant female, unless the intensity of the pain should itself endanger abortion, a result, which, according to Campbell, Capuron and Gardien is even more liable to occur from violent and long continued odontalgia, than from the removal of the affected tooth.

Salivation or ptyalism, its causes and treatment is the subject of the next chapter; the text and accompanying notes are equally instructive.

In relation to the fastidious taste and capricious appetite of pregnancy, the author presents in chapter 3, a very excellent summary of the facts and opinions recorded by the best authorities, with very full notes and references. The subject is one that derives a degree of interest from the erroneous notions that have prevailed in regard to it, rather than from its intrinsic importance. The views presented by Dr. Churchill are marked by good sense, and will be borne out by observation and experience.

The ensuing chapter on nausea and vomiting, occupies eighteen pages, and presents a very complete digest of the present state of our knowledge

in relation to the character and treatment of this, in many cases, most distressing, and occasionally, even dangerous disorder of gestation.

Among the means for arresting the vomiting enumerated by Dr. Churchill, he has not included kreasote, a third of a drop of which, or even a less portion, diffused in water, we have found to be one of the most prompt and certain remedies, even in cases of very considerable violence.

Heartburn or cardialgia, cramp of the stomach, hæmatemesis, constipation and diarrhœa, are the subjects of the five succeeding chapters, of the leading particulars connected with each of which the author's summary will be found perfectly satisfactory.

The serious inconvenience which results from the excessive accumulation of fæces in the rectum that occasionally takes place, when no attention is paid to remedy the constipated condition of the bowels, so generally attendant upon gestation, as well as the proper measures to be taken, with the view to obviate or to remove such accumulations, are very fully noticed by Dr. Churchill, with references to the best authorities for more ample details.

A chapter on *icterus* concludes the author's account of the disorders of gestation implicating the chylopoietic viscera; in this, Dr. C. very properly points out the very great importance of distinguishing that form of jaundice which arises from sympathy with the pregnant uterus, or from mechanical obstruction, from that, especially, which is dependent upon inflammation.

"Some females," he remarks, "acquire a dark, almost yellow, colour of skin during pregnancy, which must be carefully distinguished from the disease in question, as it is of no consequence, requiring no treatment, and disappearing after delivery."

Jaundice from hepatic inflammation or other serious disease of the liver, demands an active treatment, modified only by the existence of pregnancy, to prevent a fatal termination.

In regard to the disorders of the circulating system during gestation, Dr. C. remarks—

"It cannot appear surprising that the circulating system should suffer derangement during pregnancy, if we recollect, that in addition to the direct effect produced upon it by the gravid uterus, it is also greatly influenced by the sympathetic irritations of other organs. Thus, even if it did not sympathize with the uterus, still it would be liable to disturbance from disordered stomach or bowels, or from impeded respiration. The influence of pregnancy, therefore, upon the heart's action, results from a combination of direct sympathy with the uterus, and with the disorders of other organs or systems."

Palpitation of the heart and *syncope* are the only diseases of the respiratory system noted by Dr. Churchill.

The first is of very common occurrence in pregnant females, especially those of a nervous or hysterical temperament, and is entirely unconnected with any organic disease of the heart. Although it may occasion some distress to the patient, when of any considerable violence, by impeding exercise and interrupting sleep, it is said seldom to be an affection of much moment.

Occasional attacks of syncope are mentioned by some of the writers on the diseases of females, as not an unusual occurrence during gestation, especially in weak and delicate women, about the time of quickening, as also immediately before or during labour. According to Dr. Churchill, the

prognosis is only grave in those cases where the syncope is repeated or prolonged, accompanied with headache, or where there is evidence of organic disease. A very complete summary is given by our author of both these affections.

As the disorders of the respiratory system incident to gestation, Dr. C. enumerates *dyspnœa*, *cough*, and *hæmoptysis*. The *first* may attack females at any period of pregnancy; sometimes we find it during the early months, (*Capuron;*) in other cases about the period of quickening, (*Imbert;*) but most frequently during the latter months. (*Imbert, Burns, Campbell.*) The *second* symptom is described as sometimes connected with the first, but often independent of it. It occurs only in the earlier and latter months of pregnancy.

The dyspnœa is seldom a serious affection unless dependent upon some organic disease of one or other of the thoracic viscera; but the cough is considered by the majority of authorities as almost invariably attended with serious inconvenience or danger.

"The loss of rest, headache, and pains, injure the health of the mother; and where the cough is violent and frequent, there is great probability of miscarriage or premature labour." (*Capuron*, &c.)

The summary of Dr. Churchill will be found sufficiently full and satisfactory in reference to both affections.

Hæmoptysis is described by Campbell, Imbert, Capuron, and Gardien, as of occasional occurrence during the earlier and later months of pregnancy. So serious is its occurrence viewed by the latter writer, that he considers it prudent to advise those who have suffered from a severe attack of it to avoid becoming mothers ever afterwards.

Under the head of disorders of the nervous system and senses, a short but sensible chapter is given on *insomnia*, which is a most common and distressing complaint, especially during the latter months of pregnancy. When slight and of short duration it is of minor importance, but when continued and obstinate, every judicious means should be adopted for its removal.

Of the hypochondriasis of pregnant females, a tolerably extended notice is given, chiefly from the works of Denman and Montgomery.

In the succeeding chapter the subject of headache, which is probably next to disturbance of the stomach, the most common complaint of pregnant women, receives the attention its importance demands; for although it may, in the generality of cases, be of no great consequence aside from the mere suffering of the patient, in others it is a symptom of a very serious character, especially when it is the precursor of the very formidable disease which forms the subject of the next chapter—namely, *convulsions*.

In describing this affection, Dr. Churchill has deviated somewhat from his general arrangement; including, in the same chapter, an account of the several varieties of convulsive disease occurring as well during parturition as pregnancy. The summary presented in relation to the pathology and treatment of these is of some extent, occupying twenty-nine pages; the text and notes exhibiting a very complete view of the present state of medical opinions in relation to the subject.

The author divides the convulsions of gestation and parturition into the hysteric the epileptic, and the apoplectic.

The first are confined to the period of gestation, and are more frequent

during the early months than subsequently, and occur usually in females of a nervous or hysterical constitution.

The second, which is the most frequent variety, occurs ordinarily during labour, particularly in women of sanguine temperaments with short necks, and of short, square forms; they may, however, attach, also, during, especially, the two latter months of pregnancy, or not until some hours after the birth of the child.

The third variety of convulsions, seldom or never occurs except towards the termination or after the conclusion of labour. Burns, however, mentions its occurrence at the commencement, and Morithon and Menard at the sixth month of pregnancy.

The hysterical convulsions of pregnant women are seldom if ever fatal, or even do not seriously compromise the health of the patient. The epileptic form, the symptoms of which resemble very closely, if they be not identical with those of ordinary epilepsy, more generally occur in women with their first children.

"The termination of the attack (of epileptic convulsions) varies in different patients; some remain in a state of half stupor and great exhaustion for hours or days, and gradually recover. In other cases, the patient becomes maniacal, and may remain so for a long time, and ultimately recover. (*Campbell.*) In a few cases, the patient continues comatose, and gradually passes into a state resembling apoplexy, and dies." (*Blundell.*)

According to our author, the cases where epileptic convulsions occur during labour, and continue afterwards, are the least manageable; next to these, the attacks during labour only; then those after delivery; and lastly, the most favourable are those which occur during gestation.

"On the whole," he adds, "the mortality is considerable, though probably much less so than formerly. Jacob states that in his time scarcely any survived. Dr. Parr, in his Med. Dictionary, that six or seven out of ten die. Dr. Hunter, that the greater proportion were lost."

Out of 152 cases, occurring in the practice of twelve respectable practitioners, 42 terminated fatally, or more than one-fourth.

The following is Dr. Churchill's summary in relation to the pathology of epileptic convulsions:

"In the majority of cases a *post mortem* examination affords but little information. In many instances there is no alteration whatever from the healthy state of the brain. (*Bouteilloux, La Chapelle, Cruveilhier, Baudelocque, Ciniselli, Collins, &c.*) Sometimes the vessels of the brain are turgid with blood, (*Denman, Davis,*) and in other cases there is a quantity of serum effused on the surface and base of the brain, or into the ventricles. (*Dugès, Collins, Merriman, Seibold.*) The heart is generally flaccid and empty, and the lungs of a pale colour. (*Denman.*) Some fluid is occasionally found in the pleura or pericardium. (*Seibold.*) Traces of inflammation have also been discovered in the peritoneum."

The treatment recommended by Dr. Churchill for this form of convulsions, is that which has received the sanction of the majority of our most authoritative practitioners; namely, extensive and repeated general bloodletting from the arm or temporal artery, followed by cups to the nape of the neck, active purgation, cold applications to the head, blisters to the head and nape of the neck; and where, after copious bleeding and purging, the attack has somewhat subsided, an opiate.

"Considerable difference of opinion has existed upon this point, (the administration of an opiate,) owing, Dr. C. thinks, to the different parties not specifying with sufficient accuracy the time at which it should be administered, and the cases suitable for it. Under the circumstances I have mentioned, it seems to be the opinion of the highest authorities that it may be of service. (*Denman, Davis, Ramsbotham, Collins.*) Calomel, given so as to affect the constitution, has been found beneficial. Dr. Collins speaks very highly of tartar emetic, in doses sufficient to produce nausea, but not vomiting."

To the question—Are we, in cases of convulsions, to interfere with the progress of gestation or parturition?—Dr. Churchill replies, that until labour sets in naturally, there is no dispute that interference would be injurious. When the os uteri is dilated or dilatable, he advises the membranes to be ruptured, which sometimes advances the progress of the labour. Version or turning he considers a most hazardous measure. Whenever, however, the head has descended into the pelvis, and there is sufficient space, he considers it will be proper to effect the delivery by the forceps.

In regard to the pathology of *apoplectic* convulsions, or rather of that state of deep coma or of genuine apoplexy, which occasionally occurs towards the close or after the termination of labour, and which, according to our author, is evidently caused by the stress upon the cerebral vessels during the pains of parturition, we are presented with the following summary:

"The brain may be found greatly congested, but without any effusion; but this I believe to be rare. There may be great effusion of serum, which, by its pressure, will cause symptoms of apoplexy, (*Dugès,*) more frequently blood is poured out into the ventricles into the substance of the brain, or at its base. Cases of this kind have been noticed by *Denman, Targioni, Marchais, La Chapelle, Leloutre, Schedel,* and *Velpeau.*"

The prognosis is generally unfavourable. The treatment differs in nothing from that proper in ordinary cases of apoplexy.

An excellent chapter is given on the nervous affections of the eyes and ears, and another on the painful state of the mammæ occasionally observed in pregnant females.

The section on the disorders of gestation arising from mechanical pressure or distension, embraces hernia, hæmorrhoids, spasm of the ureters, incontinency and retention of urine, cramps, spasms, and irregular pains of the lower portion of the body, varicose veins, œdema, ascites and hydrothorax. In reference to each of these affections, the author's summary is particularly happy, embracing a concise notice of nearly every important fact recorded by the leading medical authorities, as well continental as British. The pathological and therapeutical views advocated by Dr. Churchill, are in general sound and judicious, and the notes appended to the text of the respective chapters, particularly interesting and instructive.

The second part of the present volume is devoted to observations on the diseases incident to child-bed. The author describes first, those diseases and accidents which affect the uterine system; then those which seem to be propagated from it; and lastly, certain febrile affections and disorders of the breast. But, in order that the limits of disease may be more perfectly defined, he has prefixed a very able notice of the ordinary phenomena of convalescence, and of certain variations therefrom, not involving organic disease, with some judicious directions for the management of pregnant females.

In the first chapter of the introductory matter, Dr. Churchill examines in detail the condition of the nervous system, the state of the circulation and respiration, the state of the uterus, vagina, &c.; the occurrence of after pains, the lochial discharge, the state of the normal secretions and excretions, and the secretion of the milk, during convalescency from a natural, easy labour, occurring in a strong and healthy woman. The second chapter treats of the general management of puerperal females, under the ordinary favourable circumstances; and the third chapter is devoted to the consideration of certain deviations from the normal course of convalescence, which are either merely temporary or eventuate in serious disease; together with directions for their proper management.

The whole of the observations contained in these chapters are in the highest degree important and judicious, and deserve an attentive perusal on the part especially of young practitioners. We are persuaded, that the actual condition of the puerperal female, after even the most natural labour, is by many but imperfectly understood; and that much, often irreparable injury is done by mismanagement; either, on the one hand, from mistaking ordinary phenomena for those of disease, and unnecessarily interfering with the view to their removal, or, on the other, from overlooking entirely important deviations from the usual course of convalescency until actual disease sets in.

Of the sanguineous tumour of the labiæ, Dr. Churchill presents a very interesting historical summary, and a good digest of its pathology and treatment.

Inflammation of the vagina, the disease next described, is important, not so much from the frequency of its occurrence, its severer forms being almost exclusively confined to cases of tedious labour and of malpresentations, but from its liability to a very unfavourable termination when it does take place, and is overlooked or improperly treated in its early stages. Vaginal inflammation subsequent to labour, is the most usual cause of vesicovaginal fistula. The author has presented a very accurate history of the disease and of its appropriate management.

The subject of puerperal fever, which follows, receives all the attention which its importance merits, as well in consideration of its frequency, and the danger invariably attendant upon it, as of the obscurity in which pathology is involved, and the differences of opinion which exist in regard to its treatment.

Dr. Churchill precedes his description of the disease by a brief, but highly interesting notice of its literary history and of its several visitations as an epidemic. From this sketch, he remarks:—

"It is evident that the disease prevails more extensively and is more virulent in hospitals. It is every where more frequent among the lower classes than the higher. In Dublin this is even more remarkably the case than in London.

"That the cause of its prevalence in lying-in hospitals is the number of patients in a ward, the want of proper ventilation, and the too rapid succession of fresh patients before the wards have been properly cleansed, is rendered almost certain by the success which has followed attempts at remedying these evils."

For the purpose of giving a more distinct view of the prevalence of puerperal fever, the author has presented, in a tabular form, a chronological list of the different epidemics, with the names of the authors by whom

they are noticed or described, and the pathological characters when ascertained.

He next enumerates the various opinions in regard to the pathology of puerperal fever, with the names of the several authorities by which each is advanced or advocated. From which we learn that, by Hippocrates, Galen, Celsus, Ætius, Paulus Avicenna, Raynalde, F. Plater, Sennert, Riverius, Sylvius, Strother, Mauriceau, La Motte, Sydenham, Boerhaave, Van Sweiten, Hoffman, Jussieu, Villars, Astruc, Pouteau, and Denman, the disease is regarded as an *Inflammation of the Uterus*. By Hulme, Leake, and La Roche, as an *Inflammation of the Omentum and Intestines*. By Waller, Johnson, Forster, Cruikshank, Bichat, Pinel, Gardien, Capuron, Gordon, Hey, Armstrong, Clarke, Campbell, and Collins, as *Peritonitis*. By Pouteau, Home, Lowder, Young, Abercrombie, Gordon, Armstrong, Hey, and Campbell, as *Peritonitis, connected with Erysipelas, or of an Erysipelatous character*. By Willis, Puzos, Levret, Doublet, and Hamilton, as a *Fever af a peculiar character*. By Peu, Tissot, Le Roi, and White, as a *Disorder of a putrid nature*. By Petit, Sellè, Kirkland, Walsh, Tenon, Tonnelaè, Lee, and Ferguson, as a *Disease of a complicated character*.

After this we are presented with a list of the *causes* assigned by different authors, for the production of puerperal fever; upon these the author remarks as follows:

"We cannot regard difficult labour as a frequent cause, though the condition in which the woman is left, will undoubtedly render her more obnoxious to the epidemic. Mental emotion is undoubtedly an efficient predisposing cause. Under its influence, females are peculiarly exposed to puerperal fever, and are rendered less able to bear it. Several of the worst cases I have ever seen were evidently attributable to this cause. Cold may be fairly admitted into this list. Whether portions of placenta remaining in the uterus, give rise to this disease, is as yet doubtful; I am inclined to think they may, but it is difficult to decide between the conflicting evidence. Irritation of the intestines may certainly be propagated to the neighbouring tissues, and, under the influence of an epidemic, may originate puerperal fever.

"That hæmorrhage, during or after labour, does not prevent puerperal fever, there is abundant proof; but that it renders the patient more liable to it may be questioned. To a certain extent, atmospheric influence has a control over the disease; in damp, moist weather it is much more prevalent, and less so, in warm dry weather."

Several tables are given from the observations of Drs. Gordon, Campbell, Ferguson, Dugès, and Delaroche, extending through a number of years, from which it is shown, that the most injurious months in *Aberdeen* were October, December, November; in *London*, January, March, February, December, May; in *Paris*, November, October, February; in *Geneva*, January, March, February.

"In general, the cold months are most fatal. No death has occurred in the month of July in the General Lying-in Hospital. The most favourable month in Paris and Geneva is June, and August in Scotland, where the summer is about three weeks later than in England. Hence we may say, that the warm months are beneficial." (*Ferguson.*)

"Whatever," remarks Dr. Churchill, "the epidemic influence may be, there can be no doubt, that to it *the majority* of cases are attributable, especially the worst and most fatal.

"Much has been written concerning the *contagion* or *non-contagion* of puerperal fever. Drs. Hulme, Hall, and Campbell, MM. Tonnellè and Dugès, &c., are in favor of the latter opinion, and Drs. Gordon, Hey, Walsh, Burns, Armstrong, Douglass, Robertson, Hamilton, &c., of the former. In all diseases which are epidemic, it is extremely difficult to decide upon the question of contagion, inasmuch as the cases which support most strongly the contagiousness of the disease, may almost all be explained by the prevalence of the epidemic cause. Nevertheless, there are some cases so marked, that I should feel scarcely justified in denying that puerperal fever is occasionally communicated by contagion."

After an enumeration of the forms of puerperal fever, according to the classification of Douglass, Tonnellè, Maeteus, Vigarous, Gardiner, Gooch, Blundell, John Clarke, Lee, and Ferguson, our author remarks as follows:—

"It appears to me, that neither of these methods is altogether free from objections; but, upon the whole, I prefer the plan adopted by Dr. John Clarke and Dr. Robert Lee, of making the local affection the basis of arrangement—as at least developing most strongly the essential facts of the disease. The great defect of this plan is the coincidence of the diseases, which it places separately; thus hysteritis, and affections of the ovaries, &c., are very often accompanied by peritonitis. Still, however, there is a broad line of distinction between them in many epidemics, and I must only guard against the defective arrangement, by stating strongly at the commencement, that it is not intended to describe the varieties as necessarily and widely distinct, as to symptoms and causes, in every epidemic; and in the course of my descriptions, endeavour to point out the occurrence of the different local affections.

"I shall thus divide puerperal fever, according to the predominant local affections, into five varieties, which I have placed in the order of frequency of occurrence. 1. Peritonitis. 2. Hysteritis. 3. Inflammation of uterine appendages. 4. Uterine phlebitis. 5. Inflammation of absorbents."

In 222 cases, Tonnellè found *Peritonitis* in 193; alterations of uterus and appendages in 197; combined lesions of uterus and peritoneum in 165; peritoneum alone affected, in 28; uterus alone, in 29.

In 266 cases, according to Dugès, the uterus was affected 3 cases in 4; ovaries 1 in 7; perforation of stomach 10 in 266; Inflammation of stomach and intestines 4 in 266; pleuritis, single and double, 40 in 266; Pericarditis 6 in 266; arachnitis 1 in 266; purulent deposit in muscles 8 in 266.

Puerperal peritonitis was the form of the disease observed in the epidemics in London, at Aberdeen, Leeds, Edinburgh, and Dublin; and it has occurred in other epidemics. The inflammation appears to affect the peritoneum covering the uterus primarily, and to extend from thence to the remaining portion of the serous membrane, involving not unfrequently the uterine appendages.

In this form of the disease, the general prognosis, Dr. C. remarks, is unfavourable, even in sporadic cases, but still more so when the disease is epidemic.

"Dr. Hulme declares it to be as bad as the plague. Dr. Leake lost 13 cases out of 19; Dr. W. Hunter, 31 out of 32; Dr. Clarke, 21 out of 28; Dr. Gordon, 28 out of 77; Dr. Campbell, 22 out of 79; Dr. Armstrong, 4 out of 44; Dr. Lee, 40 out of 100; Dr. Collins, 56 out of 88; Dr. Ferguson, 68 out of 205. In the epidemic in Paris, (1746,) in Edinburgh, (1773,) and in Vienna, (1795,) none recovered."

"If we take the results of treatment adopted in various puerperal epidemics, by various practitioners, we shall find that, on a large scale, one in every three

will die, with all the resources which medicine at present offers. To save two out of three, then, may be termed good practice in an epidemic disease." *Ferguson.*

Inflammation of the uterine appendages are often conjoined in puerperal fever with peritonitis, but, according to Dr. C., there are cases in which they exist alone, or predominate in a striking manner, or where the consequences of the disease continue longer in these parts. This is proved by the observations of Puzos, Levret, Husson, and Dance. M. Tonnellè found 58 cases of inflammation of the ovary and 4 of abscess, out of 190 cases of puerperal fever.

"*Hysteritis.*—Inflammation affecting the proper tissues of the uterus, has been frequently described. It is mentioned by Astruc, Vigarous, and Primrose. Pouteau met with it in the epidemic of 1750. Böer, and Richter, have termed it *Putrescirung* or *Putrescenz der Gebarmütter*, and Smith, Danyau, and Tonnellè, have recorded cases of it.

"In certain epidemics, it is by no means unfrequent. Out of 222 fatal cases of puerperal fever, M. Tonnellè found *simple metritis* in 79—*superficial softening* in 29, and *deep softening* in 20. M. Dugès found the womb affected in 3 cases out of 4; Dr. Robert Lee states that in 45 dissections, the muscular coat of the uterus was softened in 10 cases." p. 335.

"*Uterine Phlebitis.*—This form of disease has been frequently noticed by authors; amongst others, by Dr. I. Clarke, Mr. Waller, Mechel, Ribes, Louis, Dance, Tonnellè, John Clarke, Burns, Lee, Boivin, Dugès, Ferguson, &c., and recently, in a series of papers on metro-peritonitis, by M. Nonat. Nor is it very rare, for M. Tonnellè found pus in the veins in 93 cases, and in the thoracic duct in 3 cases out of 134; and Dr. Robert Lee, in 45 cases, had 24 of uterine phlebitis." p. 342, 3.

"*Inflammation of the Uterine Lymphatics.*—This variety of puerperal affection was first noticed in France by M. Dance, and since by Boivin and Dugès, Tonnellè, Duplay, Cruveilhier, and Nonat; the former found pus in the lymphatics in 32 cases, and in the thoracic duct in 3. In England, it was first recorded by Dr. R. Lee." p. 351, 2.

The short notice we have thus given of a few of the facts contained in Dr. Churchill's chapter on puerperal fever, will give our readers some imperfect idea of the vast amount of information it embraces. There is no point of interest connected with this formidable malady that is left unnoticed. The text, in connection with the notes, presents, unquestionably, one of the most able and instructive digests of the history, pathology, and therapeutics of puerperal fever extant; while the copious references that are given will facilitate the labours of such as desire to investigate more fully the facts, observations, and opinions of the several writers, as well ancient as modern, who treat of the disease.

This chapter alone ought to command for the work a prominent place in the library of every physician.

Equally able summaries are given in the three succeeding chapters of the causes, varieties, morbid anatomy, symptoms and treatment of rupture of the uterus and vagina, vesico and recto-vaginal fistula and laceration of the perineum.

In relation to the last mentioned accident, Dr. Churchill has shown by a detail of the several causes which are known to produce or predispose to it, that although much may be done in the conducting of a labour, to diminish the liability of its occurrence, while, in some cases, it is directly attributable to mismanagement on the part of the accoucheur, it, never-

theless, is not always in our power to prevent it taking place. He very properly remarks, that the support given to the perineum by the physician during the passage of the child's head is frequently carried to excess, and produces the very accident it is intended to prevent.

"It should," he adds, "be moderate and gentle—just so much as to support the parts, but no more. I must altogether object to any attempts to retard the passage of the child, as erroneous in theory, and mischievous in practice."

Chapter the tenth treats of Phlegmasia alba Dolens. In relation to the much disputed question as to its true pathology, Dr C. remarks as follows:—

"It is evident, that if we take pathological anatomy for our guide, we must conclude the disease to consist in inflammation of the veins of the lower extremities, in many cases propagated from the veins of the uterus, and that the interruption of the circulation through these vessels gives rise to the effusion of serum in the cellular tissue. This view also derives some support from the phenomena which result from phlebitis in other situations. At the same time, it is not impossible that some further information may be necessary, before we fully comprehend the true theory of the disease.

"The exciting cause is generally the impression of cold; and if Dr. Lee's views be of general application, we may add disease of the uterus, especially of that part to which the placenta is attached." p. 419.

The treatment laid down by the author consists in venesection in violent cases; the application of leeches, followed by poultices, along the course of the femoral vein, to the groins or to the calf of the leg, repeated as circumstances may demand; purgatives, especially the saline, with small doses of tartar emetic; when diarrhœa is not present, saline effervescing draughts; blisters; turpentine fomentations; and, to relieve severe pain, irritability, and restlessness, and to procure sleep, opiates, with a bland farinaceous diet; when the acute stage has terminated, gentle support to the limb, by means of a flannel bandage; slightly stimulating friction; the application of small blisters; tonics, as bark, quinine, or sulphuric acid, with improved diet; meat and a moderate portion of malt liquor or wine.

The remaining diseases treated of are puerperal mania, ephemeral fever, miliary fever, sore nipples, and inflammation and abscess of the mammæ; of each of which Dr. Churchill has presented a very excellent account.

In closing our somewhat imperfect notice of the volume before us, we have only to reiterate the commendations we have already bestowed on it. We have seldom had the satisfaction of perusing a medical work of the same class more creditable to the author, from the judiciousness of its arrangement, the amount and accuracy of the information it contains, and the general perspicuity of its style, or one better calculated to convey positive instruction to the reader. D. F. C.

ART. XIII. *The Library of Practical Medicine.—A System of Practical Medicine, comprised in a Series of original Dissertations.* Arranged and edited by ALEXANDER TWEEDIE, M. D., F. R. S. *Diseases of the Nervous System.* With American Notes and Additions, by W. W. GERHARD, M. D., &c., &c. Philadelphia, 1840. Lea & Blanchard. 8vo. pp. 551.

THIS volume forms the second of a series now in the progress of publication, under the general title of the Library of Medicine, the first of which was noticed in our number for August last. Whether considered as a whole, or in reference to the separate dissertations of which it is composed, it is unquestionably a work of a very high character, furnishing one of the best digests, if not the best, that has yet appeared, of the actual state of medical information and experience, in relation to each of the diseases of which it treats, in a form at once succinct and perspicuous; and in common with the preceding volume of the series, it offers strong claims to a prominent place in the library of every physician. For the student, it affords a very excellent and accurate guide to a knowledge of an important, but, in many respects, obscure class of diseases; the young practitioner will find in it a useful summary of pathological and therapeutical facts, which it would be extremely difficult to acquire from any other source; while even those who are more advanced in the profession, will be enabled, by a comparison of the results of their own experience with the general view here presented of that of the great body of medical observers throughout the world, to correct or confirm, in many instances, their own individual observations.

The account of the nervous affections, is prefaced by some general observations, by Dr. J. H. Bennett, on the anatomy, physiology, and pathology of the nervous system. The observations are well adapted to recall to the mind of the reader, the leading particulars in relation to those subjects, preparatory to his entering upon the special pathology of the several portions of the system; in other words, of the history, character and causes of the individual affections of which the nervous system may be the seat.

The fault of this introductory section, is its too great conciseness. When we reflect upon the very striking discoveries that have, of late years, been made in regard to the anatomy and physiology of the nervous system, and the light that has, in consequence, been thrown upon its general pathology, and at the same time, take into consideration the class of readers by which the work before us will be the most frequently consulted;—to whose instruction it is, in fact, mainly adapted, we are convinced that a more extended notice of many of the leading points alluded to in this introductory section, would have greatly facilitated a correct appreciation of some at least, of the important pathological and therapeutical views inculcated in the succeeding chapters.

The observations presented in the introductory section are, in general, sufficiently clear and accurate. We cannot, however, accede to the soundness of all the pathological opinions advanced by Dr. Bennett. We do not acknowledge, with him, that "innumerable facts prove that pressure" acting upon the nervous structure, "is capable of producing all those phenomena" of disease which occur and are dissipated with striking rapidity;—

those "which are confined to one part of the nervous system and not to others," and neither of which leaves any appreciable trace of their existence after death; as well as those paroxysmal attacks which occur in cases of tumours and other organic alterations of the brain, &c.

We admit, nevertheless, that the inferences and therapeutical directions based by the author upon his somewhat mechanical views of pathology, are not calculated very materially to mislead.

The subject of *inflammation of the brain*, is treated in a masterly manner in a dissertation, by Dr. James Hope of St. George's Hospital, London.

After pointing out the very great obscurity of the diseases of the brain generally, and hinting at some of the principal causes to which this obscurity is to be attributed, and which will probably prevent it from being, ever, entirely removed, the author describes at some length, the precursory symptoms of inflammation of the brain. These, as Dr. Hope very justly remarks, demand especial attention, from their constituting several groups of affections troublesome in themselves, formidable in their consequences, and by the early removal of which, disease of a more formidable and intractable nature may often be prevented.

The subject is considered under the several heads of Cerebral determination and congestion;—Cerebral congestion from debility and inanimation, and Cerebral irritation, determination and congestion, in infants and children.

According to Dr. Hope, "it may be stated in general terms,—1. That the symptoms of active determination are those of excitement or exaltation of the cerebral functions—since there is increased arterial action, yet not congestion enough to obstruct the circulation and occasion the opposite train of symptoms. 2. That the symptoms of active or arterial congestion, are those of depression of the cerebral functions—because, here, the disease has proceeded to the extent of occasioning an obstruction of the circulation. 3. That the symptoms of passive or venous congestion, are likewise those of depression of the cerebral functions—because, here, also, there exists an obstruction to the circulation. Now, the three states in question are often the precursors both of inflammation of the brain, in any of its forms, and of apoplexy and palsy; nor can we always determine, in individual instances, why they conduce to the one rather than the other; but we think it true, as a general rule, that increased determination, implying augmented arterial action, is equally productive of inflammation and of apoplexy and palsy; while congestion, especially the passive form, is more allied to apoplexy and palsy than to inflammation. So formidable are their consequences, whether of one kind or the other, that the states conducing to them, must be looked upon as serious maladies; and it is important to the student to know, that in practice, he will encounter an incomparably greater number of 'determinations,' and 'congestions,'—in other words, of precursory symptoms, than of actual inflammations, apoplexies and palsies."

Although in a formal review of Dr. Hope's dissertation, objections might be urged to the accuracy of some of the terms he makes use of, yet the correctness of his leading views, in relation to the precursory phenomena of inflammation of the brain, will scarcely be called in question. The whole of the author's remarks on this subject, are, certainly, in the highest degree important, while his practical directions deserve the closest attention. His description of the congestion of the brain, connected with debility and inanition, and his directions for its management, are particularly interesting. Of the frequent occurrence of this form of cerebral con-

gestion, whatever difference of opinion may exist as to its true pathology, there can be no doubt. In this country it has, it is true, been too generally overlooked, and we fear, that, in consequence, many lives have been sacrificed, by resorting in its treatment, to active depletory remedies.

Not less important are the remarks of Dr. Hope in relation to cerebral irritation, determination and congestion, in infants and children—a very common form of disease in early life, and to which no inconsiderable amount of experience in the treatment of the affections of young children, has taught us the importance of prompt and close attention.

The description given by the author of this affection, whether attended by symptoms of excitement or of depression; his account of its causes or pathology, and its terminations, as well as the rules laid down by him for its treatment, are clear and accurate. They are evidently the result of close observation and ample experience.

The several forms of inflammation of the brain, are treated of under the head of 1. *inflammation of the dura mater;* which almost invariably occurs as a secondary affection, from disease of the brain extending inwards, or abscess of the brain extending outwards. 2. *meningitis;* which term, after a rapid review of the facts recorded by various writers, Dr. Hope considers himself warranted in applying "to inflammation of the arachnoid and pia mater conjointly, since the two membranes are almost always simultaneously affected, and the symptoms are not distinguishable during life.

Meningitis he describes under two general forms, acute and chronic—Acute meningitis of the superior surface of the hemispheres he assumes as the type, because it is the most common form in adult subjects, though it occurs also in children.

As varieties of acute meningitis we have *Phrenitis;* or meningitis affecting a great extent of the superior surface of both hemispheres, and in some cases involving the surface of the brain in the inflammation; and *Meningo-Cerebritis*, in which there co-exists not merely superficial but deep and extensive cerebritis.

The third form of inflammation of the brain described by Dr. Hope is cerebritis, or inflammation of the substance of the brain—which may be acute, and either general or partial, or chronic, which is always partial.

Under the head of *Chronic Cerebritis* the author notices very concisely the subject of intermittent inflammation of the brain—in explanation of the phenomena of which he offers the following hypothesis:

"It is known that inflammation of the brain sometimes steals on so slowly and insidiously, especially in aged persons and weakly constitutions, and to produce comparatively slight symptoms, though serious disease be in progress. Supposing intermittent fever to be superadded to such a case, it is intelligible that the intermissions might be exempted from delirium, coma, and any marked degree of fever; whereas, the supervention of the paroxysm, by congesting the brain in common with all the other internal organs, would furnish an additional source of irritation, sufficient to impart an acute character to the cerebral symptoms, and produce delirium, convulsions, and coma. We have more than once witnessed this train of phenomena in the pernicious intermittent fevers of Rome complicated with cerebral inflammation, and have seen such cases successfully treated by large doses of quinine every two or four hours, in conjunction with an antiphlogistic treatment addressed to the head. The explanation now offered is still more intelligible in reference to chronic inflammation of the brain, and it is principally this which presents the intermittent character. It will hereafter

be seen that organic diseases of the brain may also be intermittent, and that an analagous explanation applies to them."

The above is, we confess, a very ingenious mode of accounting for the occurrence of intermittent inflammation of the brain; it does not appear to us, however, to be in any degree satisfactory, but rather to render more obscure a subject that was sufficiently so before.

There is much looseness of expression in the whole of the paragraph just quoted, that we had not expected to meet with in a dissertation marked so generally with precision and accuracy. To adduce one striking example, the author refers in the last sentence to the intermitting character of certain forms of "organic disease of the brain," meaning by this latter term disease attended with appreciable change of the cerebral structure—while, in fact, in the cases alluded to the organic disease is permanent, the paroxysmal character belonging only to certain of the phenomena by which they are occasionally attended.

In Dr. Hope's description of the anatomical character of cerebritis—softening, suppuration, abscess, and induration of the brain—of the comparative frequency of the several forms of cerebral inflammation; their exciting causes, diagnosis and prognosis, will be found a rapid but satisfactory sketch of all the prominent facts and observations connected with those subjects, while his account of the treatment of the acute as well as chronic forms of cerebritis, embraces an exposition of the result of the experience of the most distinguished of the medical authorities of Europe, compared with that of the writer's own clinical observations.

The dissertation closes with some important and very pertinent remarks on the character and treatment of those cerebral symptoms from exhaustion, resembling inflammation of the brain, to which the term hydrencephaloid disease, or spurious hydrocephalus, has been applied.

Hydrocephalus is the subject of the succeeding chapter. The account of this affection is by Dr. Bennett. The description he has given of its invasion, progress and terminations corresponds with the observations of the best writers upon the disease. His remarks upon the different forms under which it occurs when acute, will be found very generally correct, while the account he presents of the anatomical characters observed after death, affords a very accurate abstract of the facts recorded by the more ancient as well as modern authorities. The various causes of hydrocephalus and their relative importance are correctly stated, and a very excellent account is given of the experience of the leading physicians who treat of the disease, in regard to the efficacy of the various remedial agents that have been employed for its cure.

In relation to the true pathology of hydrocephalus, the note appended to the chapter by the American editor is particularly interesting. Dr. Gerhard shows, by reference to facts of every conclusive character, founded upon numerous observations made by himself and Dr. Rufz at the children's hospital at Paris, during the years 1832 and 1833, that the disease

"Is a sub-acute inflammation of the membranes, and often of the substance of the brain, which is more frequent in children than in adults, and nearly always connected with a deposit of tuberculous granulations. The sub-acute inflammation of the membranes, without this tuberculous deposit, is so rare that the exceptions need scarcely be regarded, especially in children. The disease is, therefore, a tuberculous one, and, like all affections of the same class, it is often connected with the same lesion in other parts of the body; that is, the formation

of scrofulous or external tubercles, and of pulmonary phthisis. The reason that scrofulous children, or adults labouring under phthisis, should be peculiarly liable to the disease, is readily explained. It is a mere dependence upon the general tuberculous diathesis. The forms of the tuberculous disease which precede its development in the membranes of the brain, vary with the disposition to them, which exists in particular ages of life,—thus, in children, the lymphatic ganglia are most frequently affected, and in adults it nearly always follows consumption of the lungs, and then it carries off the patient much before the ordinary termination of the disease. The granulations which are formed in the membranes, do not, in the large majority of cases, precede the inflammatory affection. If they are of extremely small size, the regularity of form and the proportion which generally exists between the numbers of the granulations and the degree of the inflammation, show that the same morbid action caused the deposit of the tuberculous substance, and of the ordinary products of inflammation. In many cases the same process occurs simultaneously in other serous membranes, as the pleura and peritoneum, and the same progress of inflammation and tuberculation takes place. This simultaneous action often occurs in the serous membranes, without those of the brain being involved, and we therefore infer that the disease is the same in both instances, although its seat is different. It is only in exceptional cases that the larger size and more complete formation of the tubercles authorise us to conclude that they were deposited previously to the inflammation, and acted merely as exciting bodies in forming its development."

"The difference between the description of the disease as adopted by Dr. Rufz and myself, and that retained in the text of the work, is simply this: After we had ascertained the regular coincidence between the intractable variety of the disease, so well known at the children's hospital, and the tuberculous affections, we classed it amongst them, because it is this common type that renders the disease, when partly formed, as difficult to arrest as other diseases of the same nature, and which furnishes us with the only rational means of prophylaxis, if not of cure. The subsequent observations of others, who have practically studied the same subject, have so fully confirmed our statements, that the term *tuberculous meningitis* is entering more and more frequently into the received nosological arrangements."

Of the correctness of the pathology here given of that form of disease which is properly designated by the term hydrocephalus, our own observations have afforded us ample evidence. We are not aware that the general recognition of Dr. Gerhard's views of the nature of the disease, supported as they are by the results of numerous autopsical examinations, will have the effect of introducing any very important modification in its treatment, or any very decided diminution of its mortality. It will, however, serve to render our diagnosis more accurate, and, by pointing out the proper prophylactic measures to be adopted, enable us in many instances effectually to prevent the occurrence of the disease.

The account of the history, pathology, and treatment of *apoplexy* is by Dr. Bennett. A very clear and accurate abstract is presented by him of all the important facts known in relation to the phenomena and etiology of the disease—and under the several heads of 1. Transient or fugitive apoplexy; 2. Sudden or primary apoplexy; 3. Ingravescent apoplexy; and 4. Paraplexia, or apoplexy complicated with paralysis, a very correct and intelligible account is given of the different forms under which the affection may present itself; founded upon the repeated observations of the most eminent practitioners. The anatomical characters of the disease are correctly enumerated, but with somewhat less definiteness in one or two particulars than could have been desired.

The views of the pathology of apoplexy advanced by Dr. Bennett, are such as are fully established by a comparison of the symptoms of the disease in its different forms, with the lesions discoverable in the brain after death, and with the best authenticated facts connected with the general physiology and pathology of the nervous system. In common with the most authoritative writers on apoplexy, he refers the comatose and convulsive or spasmodic phenomena to pressure upon the cerebral structure and the persistent paralysis to which the apoplectic seizure so frequently gives rise to rupture, to effusions of blood, or to disorganization of certain portions of the substance of the brain.

The following remarks of Dr. Bennett are deserving of particular attention, not merely as explanatory of the true character of some of the forms of apoplexy, but in consequence of the very important bearing they have upon the prophylaxis and treatment of the disease in certain cases of not unfrequent occurrence.

"How are we to attribute apoplexy to pressure in those cases where no morbid lesion can be discovered? When an individual, who is intoxicated, falls down suddenly without consciousness, we observe the pulse bounding, the countenance flushed, and the heart's action increased—circumstances which occasion distension of the arteries within the cranium, and corresponding compression of the veins. On the other hand, when a person falls down in a state of syncope, the pulse is feeble, the face pallid, and the heart's action depressed or scarcely perceptible—circumstances which indicate an accumulation of blood in the veins, and a proportionate diminution of the calibre of the arteries. In either case, owing to the peculiarities of the circulation within the cranium, pressure is exerted on the brain. Hence syncope differs from apoplexy only in the extreme feebleness of the heart's action, the cause producing loss of consciousness, sensation, and motion, being the same in both. Indeed it is sometimes difficult to distinguish these states from each other, the pulse in many cases of apoplexy being small and irregular, while a different treatment is required in such cases from those in which it is strong. Thus, either from increased or diminished action of the heart, pressure on the brain may be produced by over distension of its vessels with arterial or venous blood. After death, of course, this is not to be detected; the tonic contraction of the arteries is alone sufficient to empty them of their contents, and turgidity of the veins may remain or not according to the symptoms immediately preceding death, and the position in which the body is placed. Obstruction of the circulation may occasion effusion of serum in so great a quantity that a portion of it may be detected after death, or this may be so small as to be immediately absorbed when the circumstances which produced it have ceased. Now, in the living state, the congestion may be greater in one portion of the brain than in another; and hence may arise different symptoms in conjunction with those of apoplexy, as paralysis or convulsions, according to the situation or nature of the pressure. Such we consider to be the pathological condition of the brain in those cases where no morbid lesion can be discovered after death."

The therapeutical directions of Dr. Bennett are, generally speaking, judicious, being founded as well upon the pathological views adopted by him of the pathology of the disease, as upon the result of general experience. In the treatment of cases evidently connected with diminished action of the heart, and in which no indications exist of active cerebral congestion, general depletion by the lancet and by purgatives, probably, even local bloodletting, is inadmissible, but, even under such circumstances, we cannot agree with the author as to the propriety of diffusible stimulants, and especially of those which have a direct action upon the brain:—with

Dr. Gerhard, who has appended to the present chapter a very excellent note, we consider that in such cases—

"The best means of treatment are stimulating revulsives, such as terebenthinate injections and sinapisms; internal stimulants, which have a direct action upon the brain should be used with much caution. If decided vascular reaction should occur, the usual means of treatment may be resorted to, but in these cases the blood-letting should be chiefly local."

The subject of *insanity* is next treated of, under the heads of general or incoherent insanity, including mania and dementia, moral insanity—monomania and melancholy—instinctive madness or insane impulse, including homicidal impulse, pyromania, suicide and other morbid propensities—hypochondriasis, and puerperal insanity.

The description of these several forms of insanity—of their progress and terminations, their anatomical characters, diagnosis, causes and treatment, remedial and moral, is from the pen of Dr. Pritchard, who is so generally known as an able writer upon the subject of mental derangement, and one practically conversant with it, as to render it scarcely necessary for us to point out the perspicuous and skilful manner in which the present digest of the more prominent pathological and therapeutical facts in reference to the various forms of mental disease has been prepared. We are certainly acquainted with no dissertation upon the subject, which presents in so concise a form, an equal amount of exact and useful information—or which forms a better introduction to the more detailed study of these affections.

The chapter on *Delirium Tremens* by Dr. Bennett presents a very excellent essay on the history, causes, symptoms, and treatment of the disease; it offers by no means, however, so able a digest of the facts and observations upon record in relation to its pathology, and the remedies best adapted for its cure as we could desire. To say nothing of the several essays on the disease that have appeared in this country, many of which comprise, certainly, observations of an important practical character, the continental physicians, especially those of Germany, have studied the disease with considerable attention, and have recorded many interesting facts in relation to it, pathological as well as therapeutical—these Dr. Bennett has strangely overlooked—not the slightest allusion being made to them in the chapter before us. The work especially, of Dr. Barkhausen of Bremen on delirium tremens, furnishes many interesting facts, the result of careful observations made under the most favourable circumstances, a notice of which was to be anticipated in a work which professes to "embody a condensed, yet ample view of the present state of the science of medicine."

We have no particular objections to make either to the leading views advanced by Dr. Bennett, of the nature of delirium tremens, or to the general directions given by him for its treatment. We should have been better satisfied, however, had he discriminated with more precision the several forms under which the disease may present itself, and the modification in the treatment which each demands.

The principal errors into which physicians have been led in regard to the pathology and treatment of delirium tremens, appears to us to have arisen from the fact being overlooked, that while the peculiar group of symptoms constituting this affection—those which result simply from the indirect debility and derangement of function consequent upon over-stimulation of the brain and nervous system by alcoholic potations—may in

many instances be the only disease under which the patient labours; these symptoms often occur, also, as Von Roos and other writers have clearly shown, in conjunction with congestion or even inflammation of the brain or of its membranes, and with various other morbid conditions of that as well as of the residue of the organs: consequently, that while, under all circumstances, the proper symptoms of delirium tremens may call for their appropriate remedies—the pathological state of the brain with which these symptoms are associated, requires not unfrequently, that they should be withheld until the latter are removed, or at least that the remedies which these indicate, should be employed in conjunction with them.

In a long and interesting note to the present chapter, Dr. Gerhard has presented some judicious remarks upon the character and phenomena of delirium tremens, which correspond with the views expressed by the best writers on the subject, and the general accuracy of which will be recognized by every one who has had an opportunity of attentively studying the disease. The plan of treatment recommended by this gentleman for the removal of the proper symptoms of delirium tremens, and which he appears to pursue in all cases, even when the presence of some acute affection of the brain, lungs, stomach, &c., requires the administration of its appropriate remedies, is to place the patient under the influence of stimulants, particularly alcoholic liquors:—

"The rationale," he observes, "of this practice is evident enough; the excessive stimulation to which these patients have been long subjected is not only followed by a subsequent depression, but is attended with an extreme disorder of the nervous system, which constitutes the essential character of the disease. The stimulating practice relieves this irritability for a time, by substituting its own peculiar action, and when administered in these (moderate) doses, which are never sufficient to intoxicate, the subsequent depression may be completely avoided. Of course, no practitioner who feels a proper regard for his patient, or for his own character, would allow the patient or his friends to increase the quantity of alcoholic stimulants, to such a degree as to run the slightest risk of producing these intoxicating effects. The quantity must vary according to the susceptibility of the patient; if this has been nearly destroyed by excesses, the quantity of alcohol which is necessary to produce a given effect, must of course be greater than in those cases, in which it is still but little impaired. The dose should always be as small as possible, for if the quantity necessary to tranquillize the patient be exceeded, it acts as an irritant, and produces injurious consequences."

There can be no doubt, that by the plan of treatment here indicated the majority of the cases of simple delirium tremens, especially in their early stages, may be very promptly and effectually cured. It is, in fact, the popular treatment of the disease—the "tapering off," as it is termed by the intemperate after a debauch—and the one, also, that was formerly pursued by many eminent practitioners of this city, either alone, or in conjunction with the exhibition of opiates as recommended by Snowden in his essay published in 1815. But, leaving out of the question the moral objections to the use of alcoholic stimulants in the treatment of delirium tremens, which we nevertheless consider far too important to be entirely overlooked, our experience, and since the year 1815, we have had ample opportunities for studying the disease, has taught us that there are numerous cases of the disease, in which, to say the least of it, the stimulant treatment is of very doubtful propriety, and many have fallen under our notice in which it has proved decidedly injurious. The evidence adduced by

Dr. Gerhard of the efficacy of this treatment, and its superiority over that by opiates is certainly of a very imposing character; it is nevertheless, in direct opposition to that furnished by the practice of the Frederick's hospital of Copenhagen; the stimulant practice being there found to give of all others the least favourable results;—of the patients subjected to it in 1817, 1 in every 2.$\frac{3}{4}$; in 1818, 1 in every 2.$\frac{3}{5}$; and in 1819, 1 in every 2.$\frac{1}{11}$ died.

Notwithstanding Dr. Gerhard would appear to have entirely proscribed the opiate treatment in delirium tremens, it is nevertheless, the one that we have found the most generally successful—and the same statement is made by nearly all the more authoritative writers on the disease. We are perfectly aware that the practice has been abused—that in many instances inordinate doses of the remedy have been administered, and fatal results have in consequence ensued—that, also, in the cases attended with active congestion, or decided irritation or inflammation of the brain or of its membranes, it is all important to precede the use of the opium by local depletion, cold applications, purgatives, or stimulating enema, and revulsives. But, directed by a sound judgment founded upon correct views of general pathology and therapeutics, there are few cases in which opiates may not be employed with some good degree of certainty of their producing that sleep, from which the patient will awake perfectly restored.

It may be proper to remark, that Speranza, Frank, Rayer and Pinel reprobate in all cases of delirium tremens the use of opiates, and treat the disease as an inflammatory affection of the brain by the usual antiphlogistic remedies, while Albers, Lüders, Barkhausen, Von Roos and others confine the administration of opium, in moderate doses, to the asthenic and certain of the more chronic forms of the disease.

It has appeared to us, that by combining the opiate with camphor and ipecacuanha, we have seen more prompt sanative effects produced than when the opiate was given alone.

Dr. Gerhard's remarks on the impropriety of confining patients labouring under delirium tremens to bed, or subjecting them to any personal restraint, beyond what is necessary for their safety, corresponds with the experience of Dr. Barkhausen, who observes, also, that the patients are far more obedient to strangers than to their relatives and ordinary attendants, and are more readily controlled in an hospital than in their own dwellings.

We were somewhat surprised, we confess, to find an entire chapter devoted to the consideration of *cephalalgia*, its general symptoms, causes, morbid anatomy, and pathology, its varieties, diagnosis, prognosis and treatment; for however important this affection may be, from its frequent occurrence, its obstinacy in many instances, and the intense sufferings to which it gives rise, still it cannot be viewed in any other light than as a mere symptom dependent upon a great variety of diseases of the brain itself, or of some other organ. But however we may differ in opinion from Dr. Bennett, as to the propriety and expediency of a separate consideration of cephalalgia, we must admit that the account he has here given of it, is particularly interesting, and that his pathological remarks and practical directions are highly judicious.

In the chapters devoted to *epilepsy* and to *catalepsy* and allied affections, are presented a very full digest of all the important medical facts, opinions, and observations, in relation to the pathology and treatment of these obscure affections. The former, especially, has received all the attention

which its importance merits;—and in the account given by Dr. Bennett of its symptomatology, etiology, varieties, anatomical characters, nature, and therapeutical management, the reader will find a very fair and comprehensive exposition of the present state of medical knowledge, in relation to each of these points, arranged with great perspicuity.

A short, but able chapter, is given by the same author on *spinal irritation;* the simplest form of the affection is the one here described; its more complicated forms being treated of under the head of hysteria, &c.

The following remarks of Dr. Bennett, are judicious, and require to be kept constantly in remembrance by the young practitioners:

"The various and often contradictory symptoms induced by spinal irritation, render its diagnosis and treatment difficult and uncertain. Numerous facts, indeed, attest, that individuals have long laboured under rheumatic, neuralgic, and hysterical complaints, during which they have suffered the greatest tortures, although they have been relieved in a few days by treatment directed locally to the spine. Whatever difficulties, therefore, may exist in drawing a line of demarcation, between the effects of spinal irritation and numerous other disorders, notwithstanding the obscurity which rests on the precise nature of the morbid change which produces it, the great practical utility to be derived from its study is unquestioned. So fully are we impressed with its importance, that we consider that in all cases of neuralgia, rheumatism and hysteria, the spine should be examined; while, perhaps, there is scarcely a functional disorder to which the young female is liable, which may not occasionally be found connected with spinal irritation. We have often had an opportunity of observing the manner in which numerous disorders have been traced to this source, and feel assured that if practitioners in general would pay greater attention to this complication, many of the extraordinary and anomalous cases, which are at present the cause of great embarrassment in practice, might terminate in the speedy relief of the patient, and increased credit of the physician.

"It must not be supposed, however, that the difficulty terminates, even when the disease is found to be connected with spinal irritation, for experience has demonstrated, that this is itself not unfrequently a secondary effect, produced by the disordered functions of other organs. The first object of the medical attendant, therefore, should be to determine whether the affection is idiopathic or sympathetic, acute or chronic."

Spinal meningitis and *myelitis*, are the subjects of the ensuing two chapters. A very correct and lucid history of all that is known in relation to the various forms of these affections—the obscurity not unfrequently attendant upon which, demands on the part of the practitioner, a close attention to their diagnosic phenomena—is given by Dr. Bennett, under the several heads of symptoms, causes, anatomical characters, nature, diagnosis, prognosis and treatment. The observations of the principal writers who have treated of these affections, being carefully noted.

A short chapter, by the same gentleman, follows on the pathology and treatment of *hydrorachis*, as well that form which occurs previous to birth, as that which is developed subsequently. The account given of the disease is sufficiently full and accurate.

The latter remarks may be applied also to the chapter on spinal apoplexy; a disease of such unfrequent occurrence, so obscure in its diagnosis, and in relation to which we have so few accurate observations, as to render very defective our knowledge of its history, pathology and treatment.

The chapter on *chorea* and analogous affections, by Dr. Thompson, is among the most able and satisfactory in the volume before us, every fact tending to throw light upon the causes, nature, and management of

the complaint, being carefully noted and lucidly arranged. The account given of the several analogous affections, and the suggestions as to their pathological causes are interesting, and though we may not always coincide with Dr. Thompson, as to the entire accuracy of all his views, they are nevertheless ingenious and based upon physiological opinions advocated by men of distinguished reputation. The analysis given by Dr. Thompson of the various remedial measures that have been recommended for the cure of chorea, and of the particular cases to which they are best adapted, is sufficiently full and accurate.

In the chapter on *Hysteria*, Dr. Thompson has very happily succeeded in reducing, to use his own words, "to a simple and connected arrangement, the 'disorderly heap of phenomena,' of which that disease has been defined to consist." His pathological views, are deserving of some consideration.

After some very pertinent remarks on the term hysteria, which, although established by long use, "seems to have been generally employed with more than ordinary vagueness." The idea attached to the name by various practitioners, being almost as varied as the phenomena themselves; and even when applied to designate "a certain and definite series of phenomena," the term is liable to the objection of suggesting a theory of the disease that is extremely objectionable, Dr. Thompson remarks, that—

"The phenomena of the hysterical paroxysm are well known,—but those who are prone to such attacks are often subject to other affections, naturally referred to the same predisposition. A similar condition not unfrequently exists in some who rarely or never present the more prominent phenomena; and we therefore find it necessary to treat of the disease, not merely as an assemblage of certain characteristic symptoms, but also as a general condition disposing to the production of various analogous disorders, when suitable exciting causes are presented, we may, therefore, describe hysteria as a peculiar nervous susceptibility, leading to the production of symptoms remarkable for the capriciousness of their character, the changeableness of their seat, and the suddenness of their accession, and subsidence, the function of nutrition being seldom interferred with, notwithstanding their severity and long continuance. The mental condition of hysterical females is generally modified, and often distinguished by sensitive feelings, sudden impulses, and fickle temper. Sufficiently well marked cases of the disorder have occurred in men, under the influence of sexual restraint, or of depressing passions; but it more especially appertains to women, whose original susceptible nervous system has been rendered more than naturally mobile by an injudicious system of education; and it is from the age of puberty to the cessation of the catamenial function, that the greatest liability to the malady is observable."

Dr. Thompson describes hysteria under three forms; 1, the *regular*, in which, "the patient does not necessarily present any symptoms of habitual disorder, but is liable, under the influence of slight exciting causes, physical or mental, and sometimes without any appreciable cause, to sudden attacks of a spasmodic nature," the well known hysterical paroxysm. 2, the *irregular*, which "may exist without the occurrence of decided paroxysms. The phenomena which it presents, are indescribably various. There is scarcely any part, the function of which it may not disturb, so as to excite the suspicion of organic disease; but the rapidity with which the morbid condition is transferred from one part of the system to another, and the marked disproportion between the symptoms, are generally sufficient to indicate the real nature of the malady, although there is probably

no class of cases, in which errors of diagnosis are so frequent." 3, the *complicated*, or when from an attack of other diseases in persons of hysterical constitution, the symptoms of the two complaints are so blended, that the more important malady may be modified or even marked. "Such a complication may increase the formidable aspect of the principal disease, without necessarily augmenting the danger, although it may eventually augment disorder, by promoting inflammatory action at the extremity of irritated nerves."

Dr. Thompson refers the production of the peculiar phenomena of hysteria, immediately to disease of the cerebro-spinal axis; the mutability of hysterical symptoms being readily explained by the close connection of the different parts of this axis, and the ready transference of congestion or irritation from one part to another.

When that extreme mobility or affectibility of the nervous system, constituting the hysterical habit or predisposition, exists, a very slight excitement will be sufficient to induce symptoms of hysteria. "Among these emotions of the mind of whatever kind, as of grief, joy, unrequited affection, jealousy, disappointment or surprise, are conspicuous. The force of imitation is also very remarkable."

"The opinion that electrical agency may affect nervous subjects, is gaining ground and has the decided support of Rostan. The principal exciting cause, however, is irritation in some important organ; and since the association of hysteria with such conditions is the most important circumstance in reference to treatment, it will be found desirable to adopt a corresponding division of the malady as the basis of a more simple and available arrangement of practical remarks."

In describing the treatment of hysteria, Dr. Thompson throws aside the arrangement adopted by him in his description of its phenomena, and divides the disorder into the idiopathic and sympathetic.

The idiopatic form, is that in which there is no evidence of the disorder of any organ, except the cerebro-spinal axis. It is subdivided into the congestive, either with general plethora or local determination of blood, and the atonic.

Secondary or sympathetic hysteria, is generally associated with derangement of the intestines or the uterus, to which parts it will therefore be necessary to direct the chief attention, in the treatment of this form of the disease. Hysteria may be associated with intestinal irritation or with intestinal torpor, with menorrhagia, defective menstruation and leucorrhœa, in each of which cases a very important modification of treatment is demanded,

Notwithstanding there is some degree of awkwardness and confusion in the double division of the forms of hysteria adopted by Dr. Thompson, which might very easily have been avoided; his account of the pathology of the disease, bears, in general, indications of truth;—it certainly accords very well with our knowledge of the physiology of the nervous system, and offers a rational explanation of the various and diversified morbid phenomena characteristic of these affections to which the term hysterical has been usually applied. The practical directions of Dr. Thompson for the management of the several forms of hysteria are highly judicious.

A very admirable and full digest is given by Dr. Bennett, of the leading facts in relation to the pathology and treatment of *tetanus*. Dr. Gerhard,

in a note to the section which treats of the anatomical characters of the disease, states that he has "examined with great attention the brain and spinal marrow of ten or twelve subjects, dead of tetanus, and could not detect any lesion *which seemed to have the slightest influence* upon the production of the symptoms." We should have expected from so accurate a pathological observer, something more than this loose general statement. Before the observations, the result of which is here recorded, can be made use of in illustration of the nature of tetanus, it is necessary that we be informed whether any, and if any, what lesions were detected either in the brain or spinal marrow, or in any other organ; and also whether the tetanic affection, of which the patient died, was what is termed idiopathic or traumatic. We make this remark from the fact, that a vast number of pathological facts upon record are rendered valueless from being stated in the same loose manner.

The chapter on *hydrophobia* is also by Dr. Bennett. It contains a very clear account of the facts and opinions recorded by the prominent writers on the disease in relation to the nature of the malady, and the effects of the various and opposite plans of treatment which have been proposed for its cure. We must confess, however, that there is not any evidence afforded in the chapter, which proves positively to our minds, the production of a specific disease in the human body from the bite of a rabid animal. If we should admit that such an affection is really produced in this manner, we have then a curious fact in pathology, which stands opposed to all our previous observations, namely, that of a specific malady resulting from a morbid poison, the phenomena of which are altogether dissimilar from those of the disease by which the poison was generated.

The reader will find a very complete and interesting abstract of the present state of our knowledge in relation to the characteristics, varieties, causes, nature and treatment of *neuralgia*, in the chapter by Dr. Thompson on that affection.

The account of *paralysis*, which follows, is by Dr. Bennett. His description of the various forms and varieties of the affection; their causes, anatomical characters, nature and remedies, is sufficiently full and accurate; comprising an able and luminous digest of all that is at present known in relation to these particulars.

A short chapter by the same gentleman on *barbiers*, a disease but little prevalent excepting in tropical climates, and distinguished by tremors, spasms, rigidity and contraction of both inferior extremities, with more or less paralysis, closes the consideration of the proper nervous affections.

To these follow a very concise account of the several *inflammations of the eye*, and of *amaurosis*, by Dr. Taylor, and the volume concludes with an admirable sketch by Dr. Bennett of the inflammations of the ear.

We have thus run rapidly over the present volume of Dr. Tweedie's Library of Medicine, and expressed briefly but candidly our opinion of its contents. The estimate we have formed of the value of each of the chapters, separately considered, will be found to accord strictly with the high character we gave, in the commencement of this notice, of the work as a whole.

We may remark in conclusion, that, in general, the notes of the American editor are important and judicious, and enhance not a little the value of the present edition. D. F. G.

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*Remarks on Fractures.* By A. L. PEIRSON, M. D. 8vo., pp. 108. Boston: 1840.

THE dissertation of Dr. Peirson formed the address for 1840, which is annually delivered before the Medical Society of the State of Massachusetts; and the author was induced to make choice of the subject of fracture, not because he had any new views to offer, or novelties in practice to recommend, but from its being a subject of deep and universal interest to the profession.

The kinds of displacement after fracture, the causes, symptoms, prognosis, and mode of union, are all concisely considered; and the general indications in the treatment of these injuries, are well set forth. The subject of non-union is also cursorily glanced at; but the chief part of the address is occupied in treating of the peculiarities presented by fractures of the different bones in their diagnosis and treatment. Appended in the form of notes, are the details of six cases treated by the author with the immovable apparatus, and an interesting series of tables relating to fractures, collected from the records of the Massachusetts General Hospital, from 1821 to 1840. The whole number of fractures which occurred in this institution during the period mentioned, was 367; but out of this number of cases, owing to defects in the record, but a small proportion only could be used for analysis. The small number of cases included, detracts considerably from the value of the results obtained by their analysis; but nevertheless, as they may materially aid in future investigations on the subject of fracture, we shall lay them before our readers. With the exception of the tables compiled from the records of the Pennsylvania Hospital, by Dr. Wallace,* we know of none which have been so carefully drawn out as those contained in the work before us, and cannot but regret that so little statistical information of a similar kind is furnished by those connected with the public institutions in this country.

In regard to the influence of age on the time of union of bone, in cases of simple fracture, the following are the results of analysis:

Clavicle.—In seven cases under thirty years of age, the average time of union was 20.85 days. In six cases over thirty years of age, the average time of union was 21.50 days. Average union of the whole thirteen cases, 21.15 days. Average time of discharge of twelve cases, 28.25 days.

Humerus.—In six cases under thirty years of age, the average time of union was 25.16 days. In four cases over thirty years of age, the average time was 28.50 days. Average of the whole ten cases, 26.50 days. Average time of discharge, 36.62 days.

Femur.—In eighteen cases, thirty years of age and under, the average time of union was 35.88 days. In seventeen cases, upwards of thirty years of age, the average time of union was 43 days. Average of the whole thirty-five cases, 37.62. Average time of discharge of twenty seven cases, 51.29 days.

Tibia and Fibula.—In eighteen cases of thirty-one years and under, the average time of union was 32.33 days. In seventeen cases, upwards of thirty-one years of age, the average time was 38.64 days. General average of thirty-five cases, 35.08 days. Average time of discharge of twenty-eight cases, 47.53 days.

Tibia alone.—In six cases under forty years of age, the average time of union was 23.50 days. In six cases of forty years and upwards, the average time was

* Medical Examiner for 1838, and this Journal for Nov. 1839, p. 259.

31.33 days. General average of twelve cases was 27.41 days. Average time of discharge for seven cases, 35 days.

Fibula alone.—In eight cases of thirty-two years and under, the average time of union was 22 days. In eight cases, upwards of thirty-two years, the average time was 30.87 days. The general average of sixteen cases was 26.43 days. Average time of discharge of ten cases, 30 days.

Patella.—In three cases under thirty years of age, the average time of union was 58.33 days. In three cases of thirty years and upwards, the average time was 23.33 days. General average, 40.83 days. Average time of discharge of four cases, 41 days.

"Thus it appears, that in all cases except those of fractured patella, there is a remarkable uniformity as to result in the influence which the age of the patient exerts in fixing the period when union takes place; the average time of union being shortest in the younger class of subjects."

In looking over the tables we have been much struck with the great mortality following the amputations made in the cases of fracture. In the whole number of cases, (367,) eighteen patients are stated to have undergone amputation, of which five are marked cured, ten as having died, and the results of three are not mentioned.

The following notices of cases we extract from the address without comment. They are rare and curious, one of them perhaps *unique;* and it is to be regretted that they have been mentioned with so little detail.

"A seaman was brought under my care, who forty-five days before, while at sea, had fallen from the main-top-sail-yard upon the deck of the vessel, fracturing the humerus obliquely. The superior fragment penetrated the skin, and after ploughing a furrow in the plank half an inch deep and two inches long, was finally broken off in it. On my first visit, this fragment, which was about three inches long, was presented to me, which the captain assured me he had much difficulty in extracting, two days after the accident, from the plank in which it had buried itself. The final consequences of the accident were, after the patient's recovery, anchylosis of the elbow, shortening of the humerus, partial anchylosis of the shoulder joint, and displacement of the fragment of the fractured scapula." p. 7.

"A wagoner was crushed, by the passing of the wheel of his loaded wagon over the lower jaw. A double fracture was occasioned, and the detached portion of bone, with the tongue, was forced down the throat, so as nearly to occasion suffocation. The accident occurred in the night, but, fortunately, near a house whose inhabitants were awake; and the patient obtained the loan of an iron spoon, with which he contrived to drag the tongue forward, and prevent the impending suffocation, till I was enabled to secure the fragments by wiring the teeth. Great swelling followed, preventing deglutition for many days; but the patient, being supported through an œsophagus tube, eventually recovered. p. 41.

"A man twenty-one years old fell from a tree, at the height of fifteen feet, and struck his head upon the pavement beneath. His head was bent down upon his chest, and the weight of his body brought a strain upon the cervical vertebræ. A severe laceration of the scalp was his most obvious injury; but he constantly asserted that 'his neck was broke.' I could discover no perceptible crepitus, by the slight movement I dared to make; and there was, at first, no paralysis. After death, which occurred twenty-two hours after the accident, three of the cervical vertebræ were found fractured, and their intervertebral substance crushed and comminuted. The remarkable symptoms in the case were, the absence of paralysis, till within two hours of death, the undisturbed state of the intellectual functions, and the patient's own consciousness of the real nature of the injury under which he was suffering." p. 42.

In terminating our notice of the Remarks of Dr. Peirson, we must express the pleasure that we have derived from a careful examination of them. They come evidently from a practical man and acute observer. The observation made at the commencement of the address, that the honest views and faithful

experience of any member of the profession, on even the most common practical topics, are worthy of attention, is eminently just; and we cannot but wish that gentlemen called upon to perform duties similar to that of which Dr. P. has so well acquitted himself, would give us plain and honest views of their experience, in the diseases or accidents of every day occurrence, in place of the vain attempts at oratory on thread-bare subjects, which we so frequently meet with.

G. W. N.

ART. XV. *Remarks on the Surgical Practice of Paris.* Illustrated by cases. By W. O. MARKHAM, M.D., 8vo. pp. 114. London: 1840.

THE work before us constitutes the thesis of the author, to which a gold medal was assigned by the Senatus Academicus of the Edinburg University, at the graduation of 1840. That our readers may be able to judge of its character, we proceed to furnish some extracts from it, premising, however, that by his own confession, Dr. Markham passed but a few months among the Parisians—a time hardly long enough for one well versed in the subject, and of mature mind, much less for "a young and not very experienced observer," to give an account of the general practice adopted at their hospitals, and pronounce judgment on their surgeons.

Much has been said of M. Louvrier's apparatus for the cure of anchylosis. The subject is thus noticed by Dr. Markham.

"*Anchylosis.* M. Louvrier's operation. A woman, 45 years of age, under M. Blandin's charge at the Hôtel Dieu, had been affected with anchylosis of the knee for ten years, an anchylosis consequent on white swelling. The leg was very much flexed upon the thigh, forming an acute angle with it; motion was almost entirely destroyed; but on rubbing the parts together forcibly, a slight crackling was heard and felt. The back of the condyles, and *not* the lower surface of the femur, rested on the tibia, and the patella was forced on the under surface of the femur, and appeared fixed and united there. All the parts which surrounded, and entered into the composition of the joint, were retracted. Such was the condition of this woman's knee when she presented herself for relief. Her health was good, and she was willing to undergo any suffering even amputation of the limb, rather than submit to the endurance of this impediment, which rendered her life (always hitherto an active and industrious one) burdensome.

"It was evident, that all the simple and ordinary methods employed for the resolution of anchyloses, were futile in respect to this case, both by reason of the long period of the existence of the malady, and its extent. So grave an operation as amputation, M. Blandin thought was inadmissable, though I believe in like cases it has occasionally been performed at the request of the patient.

"After some discussion it was at last determined, at the particular request of the patient, and after many pressing instances from M. Louvrier, that this gentleman should be permitted to practise his operation (which was much the subject of discussion in Paris at the time) on the knee, though still much against M. Blandin's opinion.

"The object of M. Louvrier's operation is, by the aid of powerful machinery, to extend the anchylosed joint, disregarding utterly all impediments, and the nature of these impediments. The apparatus employed, it is impossible to describe, as it is of infinite complexity, and requires much time, labour, and dexterity to arrange; but the principle of its action is plain: The thigh is made a fixed point, and extension is applied to the leg by aid of the two mechanical powers, the screw and the lever, sufficient to reduce the limb from its highly flexed, to a perfectly extended position. What is going on in or about the joint, during the operation, it is impossible to observe, as the whole limb is thickly enveloped in coverings of brass, leather, &c., &c. When the apparatus is adjusted, all that is visible is the limb thus covered, placed in a wooden case,

and resting in a kind of groove, where it slides as it is extended. The operator places himself at the foot of the apparatus, and turns a small wheel, which acts on the leg through the medium of a very strong catgut cord attached to different parts of the leg; the limb gradually redresses itself, and in about two minutes it is perfectly extended. The pain suffered by the patient seemed excessive, and was prolonged by reason of the apparatus breaking in some part during the first attempt. What the force applied was I do not know, but it must have been very great. On examining the limb, when the apparatus was removed, the patella was found free, and the tibia almost entirely thrown *behind* the femur. Conjecture alone could give information as to what had taken place inside the joint. The skin was not torn near the joint, but it was at the heel. Every precaution, after the operation, was taken to anticipate the violent inflammation which might be expected to arise, by the application of leeches, &c., and by placing the limb in a perfectly immoveable position. By these, and other antiphlogistic means, the violent constitutional symptoms that arose were subdued, and she (the patient) seemed to rally from the low state into which she had fallen. But it was only an appearance of return to health, and she gradually sunk into a desponding state. The pain in the knee was constant, her nights were often sleepless, her appetite not good, pulse quick, and extreme pallor of the face. She thus continued till she left the hospital, about five months afterwards. The limb then was perfectly useless, and always painful, and could not sustain the slightest pressure of the body; and this woman evidently seemed sinking from some cause, when she demanded her dismissal. It was difficult to give the precise state of the knee, as it was, and had been all along from the time of the operation, enveloped in the starched bandage.

"Two other operations of this nature were performed shortly afterwards, on patients of M. Velpeau at La Charité; one died fifteen days after the operation, it was said, of peritonitis; the other, after a rather longer period. At Hôpital Neckar, another case terminated fatally, through gangrene, I believe, of the limb; and M. Roux mentioned a case where he was called in to perform amputation of the thigh, which had been fractured in a young man during M. Louvrier's operation.

"Several other cases were mentioned in the journals as occurring in hospitals and private practice, and with different success as to their results.

"It is a matter of no little surprise to find, that it is possible for men of the highest anatomical knowledge and surgical skill, so to lose sight of the first principles of surgery, and admit into their practice (even against their own conviction) an operation of the above nature, where all the elements of scientific reasonings are broken down, and made to yield before the force of brute mechanical power—ligaments ruptured, tendons or muscles rent from their adhesions, muscles torn, arteries or nerves torn asunder, go for nothing in M. Louvrier's reasoning. He does not deny that all, or any of these accidents may happen; but he affirms that, from some extraordinary circumstance, no evil results arise from their occurrence, basing this assertion on a long list of published successful cases, which, if true, would, indeed, bring a new era into the art of surgery; but as these cases were published under M. Louvrier's care, and most of them only a short time after the operations were performed; and as one or two well authenticated and isolated cases of success prove nothing, we can place little reliance on this assertion, which is most decidedly opposed to the facts which occurred in the public hospitals, and which do not seem to prove, at least in this instance, that *à priori* scientific reasonings are to yield even to the speciousness of a novel discovery, (as it was called,) embellished by the colours of vaunted continual success.

"In the case of the Hôtel Dieu, M. Blandin argued against the operation, before it was performed, but yet he allowed its accomplishment. This instance, however, made him declare that in a like case he would never admit a like operation; that it is dangerous in the extreme, and contrary to all reasonings. M.

Lisfranc, in his usual warm way, sternly opposed himself to it, and always regarded it as a species of pure empiricism.

"After writing the above, I was informed of two other recent cases, one at Hôpital Beaujon, where great laceration of the skin, and death was the consequence; and of another in town, where rupture of the popliteal artery, and sphacelus of the limbs ensued."

Our next extract concerns a Parisian operator who has long had an unenviable notoriety by his love for cutting.

"In speaking of cancerous tumours, I might mention that the most formidable do not seem to deter the surgeon in chief of the Hôtel Dieu, (M. Roux,) from attempting their removal. I have seen him remove an encephaloid tumour of the testicle, in its last stage of degeneration, extending towards the abdomen along the course of the cord—a tumour larger than two fists—it was an operation of great difficulty, and of great pain and suffering to the patient, but was performed in a masterly manner, the enormous wound left was covered with charpie, and ulceration and suppuration proceeded their course for a month favourably, when there appeared a small tumour rising up in the centre of the wound, as if proceeding from the abdomen; it increased rapidly, and when it had gained the size of an egg, M. Roux again ordered the patient into the operating theatre, and again removed a tumour; a third was not long in showing itself, and M. Roux at last deeming all attempts to remove an immoveable disease useless, sent the the man into the country to die. This case, as occurring in the hands of the first official surgeon in Paris, must excite no little surprise; but in a scientific point of view, it surely needs no comment.

"Of the same aspect was another case of fungoid disease, occurring in the femur, where the patient's powers of suffering seemed to me most uselessly put to the test, and his end hastened by an operation. This man presented that well-known aspect which is an infallible indicator of the progress of cancer; the thigh was enormously swelled, and covered with blue veins; a small part of the highest part of the thigh appeared unaffected by the disease, and here M. Roux amputated the limb: the operation was most difficult and prolonged; a very great quantity of venous blood was lost; the man fainted again and again after the operation, and then rallied, but he never recovered from the shock, his face was sunken and pallid and mournful, his pulse quivering, and agitation extreme, and he died on the third day after the operation. The fungoid disease proceeded from the centre of the bone, of which it had completely altered the texture; the muscles also, all around the thigh, could not be distinguished from the diseased mass."

M. Ricord and his practice are thus spoken of:

"*Phymosis.* M. Ricord always performs the operation of circumcision in this complaint, when it is possible, but when the phymosis is complete, when the prepuce is small, and tightly applied to the gland, then another operation must be performed. In performing this, M. R. is not content with the common incision, carried along from the opening of the prepuce to the base of the glans, (on the upper part of the penis;) but after making this, he practises another in a parallel direction, on the lower part, at the frœnum; then seizes the flap left on either side with a pair of forceps, and cuts them off with the scissors. This operation is long, comparatively, and painful; but M. R. declares that the result, which is really excellent, well repays the extra pain, for scarcely any deformity ensues; and this is of the highest possible importance, added M. R , for there is no part of the body where surgery ought to be more coquettish.

"In performing this operation (and the same rule applies to all other operations on the penis) the points of the incision should be marked out by nitrate of silver, at the spot where the knife's point should make its appearance at the base of the glans. In circumcision, also, the line of incision should be marked; a narrow, fine, sharp knife should be used. After making these observations, M. R. proceeded to operate on a case of the nature mentioned above, where the prepuce was firmly applied to the glands, and was very short. M. R. unwittingly made use of a very large, dull knife, and did not mark out the point where the incision

ought to terminate. The consequence was, that the knife, when pushed forwards, instead of piercing the skin at the base of the glans, puckered up the skin before it, so that when the knife was forced through, and the incision completed, the skin of the dorsum of the penis was ripped up very nearly to the pubes.

"M. R. said that he had seen Dupuytren and his own predecessor at the Hôpital du Midi, cut off the glans penis as well as the prepuce, in operating for phymosis, by circumcision."

The following remarks are made under the head of amputation:

"As regards the healing of the stump, it is almost impossible to make a comparison between the results of the flap operation, now so generally practised in England, and the results of the circular, as performed at Paris,—for several of the leading surgeons still hold it, both by precept and example, as highly unscientific, to attempt union by the first intention, and their reason is, because this first intention so very often fails;—but why does it fail? No man in *England* can guess; but I think, that if any unbiassed individual will pay a visit to any of the large Parisian hospitals,—follow the changes in the wound of an individual, who has just entered for an injury, being previously in perfect health,—if he will notice the characters which almost every wound takes on—the ever-existing erysipelas, and its distressing consequences, he will at once allow that there exists some other cause than the idiosyncrasy of French limbs, or the particular nature of the healing process itself, to account for its failure. Moreover, are all the rules of the operation properly attended to? I doubt this. The heat in the hospitals is most oppressive;* ventilation, or opening of a window, is not permitted; each bed is covered, above, and on all sides, by curtains; and, what seems almost incredible—certainly incomprehensible—when an individual has undergone an operation, the curtains of his bed are *doubled* on every side, and he is covered up with as much care from all currents of air, as if he were an exotic in the hotbed of a gardener. In one winter Dupuytren lost twenty-one out of twenty-six amputations below the knee. And let any one who wishes to be convinced, visit that hospital at any time, and see erysipelas always present—often raging—in the surgical ward; and he will have much less difficulty than he had before, in understanding why the wounds from operations almost always fail to heal by the first intention. No doubt, the Hôtel Dieu presents the worst picture of Parisian hospitals; but the same circumstances prevail, to a greater or less extent, in every hospital. Moreover, as to the dressings to produce union, are they such as are appropriate? M. Blandin (who is the only gentleman who attempts the first union) says, no; and in fact, accounts for the failure of his *confrères*, through their faultiness on this point. M. Lisfranc never attempts union by the first intention;† and he adds, occasionally, another peculiarity to his operation, viz: slitting down the lower flap, according to the invariable proceeding of Baron Larrey; and this, with the intention of being enabled, when he pleases, and when granulation has commenced at the bottom of the wound, to bring the parts into more perfect contact. The only possible advantage which this addition seemed to me to give, was its allowing free issue to any puriform matter, and preventing any collection taking place. Its obvious inconvenience, in uselessly enlarging the wound, struck me as quite condemnatory of its practice. M. L. always dresses the stump the day following the operation. M. Roux heals stumps by the established method; though now and then he attempts the first intention; but his rule of practice I could not discover. The only good stump I saw in his ward, was one healed by the first intention in fifteen days after the operation. The appearance of a large, red, flat surface, covered with granulations, and often with a bone projecting from the

"* I have several times seen medical students (who cannot certainly be considered as an hysterical class of beings generally) faint in the Hôtel Dieu during the visit, and have myself frequently experienced excessive weakness and giddiness in the same hospital."

"† M. Velpeau has made the attempt, but it has failed in his hands."

centre, was a curious view to an English eye, and it was one with which I was made quite familiar in M. R.'s wards. The results of his practice, I should say, were unlucky, for I have seen exfoliations of bone take place—abscesses form in all directions—in fact, I believe, never an amputation (where union by granulation was attempted) without some accident. The reason of the frequency of these secondary accidents may, I believe, be in great part sought in the unhealthiness of the Hôtel Dieu, for they happened also to M. Blandin; but in part also, from the nature and conditions of the cases on which M. Roux operates.* Thus, I have seen M. R. amputate an arm below the shoulder, in an individual in the very last stage of hectic and feebleness, and whose whole arm was a mass of suppuration; two days after the amputation, an abscess was opened beneath the *pectoral* muscle, and an enormous quantity of discharge evacuated: the abscess reached in every direction, and the man died on the third day."

The extracts above given are fair specimens of the work. The fondness of the chief surgeon of the Hôtel Dieu for operating in hopeless cases, is matter of notoriety to all visitors to Paris who have followed his clinique, as well as to the French themselves, and should be condemned. The carelessness of M. Ricord, provided the writer be correct, he is justified in exposing, and the results of the murderous treatment lately employed there in cases of anchylosis, the matter of which, we may add, we find confirmed in some of the late periodicals, it is the duty of a writer to make known, and for a passing notice of these and like subjects, we have no fault to find, though we cannot but disapprove of the general spirit of the work, which we think calculated to do injury to the well-earned reputation of Parisian surgeons, and to leave a bad and unjust impression upon the mind of the reader, in regard to French practice generally. Dark points are set out in relief, and dwelt upon; their excellencies are forgotten. Surely in a city like Paris, unequalled, as she is, in her institutions for the relief of misery, and abounding in surgeons able, learned, and devoted beyond parallel to their pursuits, something good and worthy of imitation—something that at least could be well spoken of, might be found by one going there to seek knowledge, and in a work like the present, which professes to notice the surgical practice of its hospitals, more is expected than the mere showing off of the weak points of particular individuals. G. W. N.

ART. XVI.—*The Elements of Materia Medica, comprehending the Natural History, Preparation, Properties, Effects, and Uses of Medicines. Part II containing the Vegetable and Animal Materia Medica.* By JONATHAN PEREIRA, F. R. S., and L. S., member of the Royal College of Surgeons, &c. London: 1840. 8vo. pp. 891.

IT gives us much pleasure to be able to announce the appearance of the second part of Mr. Pereira's great work on Materia Medica. This includes the remedies derived from the animal and vegetable kingdoms, and while it has all the merits which we on a former occasion ascribed to the first part of the work, is much more extensive, and more replete with diversified, interesting, and novel information.

Mr. Pereira's treatise evinces much original observation. He has not contented himself, as writers on materia medica are apt to do, with merely copying his predecessors, but he has examined carefully for himself, and has drawn his knowledge from the fountain head. We do not mean to say that all, or even a hundredth part of what he has written is entirely original, so far as relates to

"* In giving such free opinions, here as elsewhere, I do trust, that it will be remembered, that they are *but the opinions* of a young, and consequently, not very experienced observer. To have illustrated every opinion by numerous cases, would have been impossible, from the necessary limit of these notes."

the facts or opinions stated. A work on materia medica thus constituted would be good for little or nothing. The science is made up of the experience and observation of ages, and the proportion of new facts to the whole mass is very small. But errors have on various occasions crept into treatises upon this subject, and statements which were true when they were first made, have, by gradual changes in the course of trade, and from various other causes, become false in relation to the present times. Now these errors and misstatements have been perpetuated by the too common habit among authors of restating what they find stated by others, without examining for themselves. Mr. Pereira has not been guilty of this fault. He has, it is true, consulted a vast number of authors, of various countries and languages, British, French, German, and American, and has with great industry culled whatever was important from their writings. But he has not contented himself with the mere process of culling. Wherever he has had the opportunity, and we presume no place in the world affords better opportunities than London, he appears to have made personal examination into the history and character of drugs, and while he has thus been enabled to give his sanction to statements that might otherwise have been doubtful, he has succeeded in collecting many new facts, and in correcting many mistakes. There is, therefore, a freshness and raciness about his work, as if it had sprung directly from the soil of observation. It is neither stale from the mere repetition of long kept truths, nor musty with antiquated errors. Even the long recorded facts of the science have in his treatise an air of originality, as he has obviously not passed them through his hands without a particular scrutiny. He has in some measure made them his own by assuring himself of their genuineness.

Another merit of Mr. Pereira's work is the frequent reference to authority. The author is rich enough himself to afford to pay what is due to others. The great mass of materials which compose the basis of the science are so generally known as to have become common property. Of these, of course, he makes use without specific acknowledgment. But whatever is new or peculiar, he refers expressly to its source, when discoverable, and not unfrequently traces a fact, through the medium by which it has reached him, up to its original fountain. His conduct in this respect contrasts very happily with that of many writers, whose chief merit consists in so skilful an arrangement of borrowed materials, as to gain the credit of their authorship from those who know no better, while to the well-informed, they give no available opening for a charge of plagiarism.

Where so much has been done, and so much done well, it would be vain to attempt a specification of the merits of particular parts. Specimens of the work have already found their way into the journals, from which the medical public may infer the general style of its execution. An idea may be formed of the immense amount of matter collected, from the fact that the treatise extends, including both its parts, to 1440 large and closely printed octavo pages, and that the language is exceedingly concise, perhaps, in some places, even to a fault, so that substance is never excluded by mere verbiage. The style is throughout, clear and precise, without attempt at ornament, but correct, plain, and simple, such as that of a purely scientific work ought to be. For the physician who is desirous to become master of what is known upon the subject of materia medica, we cannot too strongly advise the perusal of Mr. Pereira's treatise.

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ART. XVII.—*First Annual Report of the Registrar General on Births, Deaths, and Marriages in England.* London: 1839. 8vo. pp. 168.

MR. LISTER, the Registrar General, in presenting this report to Lord John Russel, one of the Secretaries of State, observes, that the abstract contained in it, is for the year ending June 20, 1838. The first part of the document is taken up with the details attendant on the organization, and it is evident that the labours of Mr. Lister and his assistants for this purpose have been great. At the termination of the fifth quarter, ending September 30, 1838, there were no

less than 2193 registers of births and deaths appointed, and three months later, 817 registers of marriages. To each of these, were furnished the proper books, besides marriage register books to 11; 694 Clergymen of the Church of England, to 90 registering officers of Quakers, and to 36 secretaries of Jewish Synagogues.

There are thus more than 14,000 persons charged with the duty of making returns, and from these were received for the year above stated, more than 80,000 separate papers containing 847,149 entries.

Without noticing this part of the subject farther in detail, we proceed to give the results obtained by Mr. Lister. And first of

MARRIAGES.

	According to the Rites of the Established Church.	Not according to the Rites of E. C.	Total.
Quarter ending Sept. 30, 1837,	23,541	489	24,030
Quarter ending Dec. 31, 1837,	33,291	1,158	34,449
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Quarter ending June 30, 1838,	28,353	1,448	29,801
The whole year,	107,201	4,280	111,481

Of the marriages included in the second column, 76 were between Quakers, and 135 between Jews.

The following is also added—

Number of persons named not of full age,	Males -	5,575
	Females -	16,563

Births.—To this part of the system, there appears to have been at first, an obstinate opposition; the consequence was a deficiency in the early registrations:

	Males.	Females.	Total.
Quarter ending Sept. 30, 1837,	38,368	36,220	74,588
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The Whole Year,	204,863	194,849	399,712

Deaths.—In order to render these returns more available to the general welfare, Mr. Lister issued a circular to all the authorized practitioners of medicine and surgery in England and Wales, whose names and address he could obtain, requesting them to place in the hands of some person, in the house where the death occurred, a written statement of the *cause of death*. This proposition was strenuously supported by the respective Colleges of Physicians and of Surgeons and the Society of Apothecaries, and the result has proved highly satisfactory. The arrangement of these returns was committed to Mr. William Farr, and his tables constitute a most valuable part of the present report.

Mr. Lister from former well ascertained data, estimates the population of England and Wales, during the period included in this report, at 15,324,720.

The deaths returned for the year, were

Males,	170,965
Females,	164,991
	335,956

Being rather more than one death in 45 of the population.

The abstract of deaths is arranged in twenty-five tables, comprehending the

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whole of England and Wales, and these again are calculated in the proportion of the respective deaths at various ages in 1000. From the summary we select the following:

	Males.	Females.	Total.
Deaths under 1 year	39,990	31,898	71,888
of 1 year and upwards	14,198	13,710	27,908
of 2 years	7,474	75,09	14,983
100 and upwards	39	66	105

The following table shows the proportion of deaths at differen. ages, out of every 10,000 deaths of males, of females and of both sexes:

	Males.	Females.	Both Sexes.
Under 1 year	2,339	1,993	2,140
1 to 4 "	1,742	1,780	1,760
5 to 9 "	457	462	460
10 to 19 "	554	647	599
20 to 29 "	738	833	785
30 to 39 "	655	715	683
40 to 49 "	653	632	643
50 to 59 "	656	621	638
60 to 69 "	813	823	818
70 to 79 "	830	883	856
80 to 89 "	473	556	514
90 and upwards	94	115	104
	10,000	10,000	10,000

It is not possible, within our brief limits, to do full justice to the herculean labours of Mr. Farr. He has not only given a general table of the mortality, but he has carried out the abstract of the causes of death in each of the twenty-five divisions already alluded to, so that the healthiness, or at least the prevalent diseases in every district may be seen at a glance and compared with each other. We must content ourselves with some general results.

In his communication to the Registrar General, Mr. Farr submits the abstracts of the "Recorded causes of 141,607 deaths, which were registered in England and Wales, during the HALF YEAR ending December 31, 1837." The total number registered for that period, was 148,701, thus leaving 7,094 unaccounted for. After explaining the principles on which he has arranged his statistical nosology, he presents a table, from which we extract the general divisions:

	Males.	Females.	Total.
Epidemic, endemic and contagious diseases,	16,190	16,347	32,537
Diseases of the Nervous system,	11,729	10,123	21,852
" of the Respiratory organs,	18,925	19,596	38,522
" of the organs of circulation,	902	694	1,596
" of the digestive organs,	5,115	4,635	9,850
" of the urinary organs,	683	133	816
" of the organs of generation,	13	1,485	1,498
" of the organs of locomotion,	505	424	929
" of the integumentary system,	158	106	264
" of uncertain seat,	7,942	8,265	16,207
Old age,	5,674	7,017	12,691
Violent deaths,	3,005	1,240	4,845
Causes not specified,	3,718	3,376	7,094
	75,159	73,542	148,701

Some of the diseases may be more particularly specified. Thus the mortality of

	Males.	Females.	Total.
Cholera is	246	214	460
Influenza,	220	264	484
Small Pox,	3,050	2,761	5,811
Measles,	2,340	2,392	4,731
Scarlatina,	1,238	1,282	2,520
Hooping Cough,	1,277	1,767	3,044
Diarrhœa,	1,451	1,304	2,755
Dysentery,	350	325	675
Typhus,	4,439	4,608	9,047
Convulsions,	5,798	4,931	10,729
Consumption,	9,494	10,753	20,247
Decline,	3,474	4,033	7,507
Dropsy,	2,445	3,139	5,584

One of the most interesting comparisons instituted by Mr. Farr, is that between city and county districts:

The population of the cities compared, was	3,553,161
The total deaths, derived from the thirteen classes above enumerated, were	47,953
The population of the counties, was	3,503,750
Total deaths as above,	29,693

Again, in the above population of seven millions, one-half of which live in towns, and the other half in rural districts, the deaths by consumption, childbirth and typhus, were as follows:

	Counties.	Cities.	Increase per cent in Cities.
By consumption,	5,857	8,125	39
By childbirth,	217	372	71
By typhus,	1,564	3,456	221

"1265 females died in childbed, and the greater proportion of puerperal fever." This, let it be recollected, is for six months only. It is greatly to be regretted, (says Mr. Farr,) that in the present state of medical science, 2,500 women die in childbirth every year in England and Wales. And when this is compared with the number of births and miscarriages, he estimates, that nearly 4 in 1000 are fatal to mothers.

It is evident, that if these investigations are continued in the spirit with which they have been commenced, they will furnish most important contributions to the science of Vital Statistics.

In conclusion, we have only to regret, that the number of suicides and stillborn are not distinctly stated. The former are included under the division of violent deaths, and the latter do not appear to have been enumerated; at least we can find no mention of them. T. R. B.

Art. XVIII.—*Erster Medicinischer Jahres-Bericht vom Marien-Krankenhaus für Arme in St. Petersburg vom Jahr*, 1836. Von dem Oberarzt dieser Anstalt Dr. H. U. L. V. Roos, Staatsrath, Ritter, u. s. w. St. Petersburg, 1837. 8vo., pp. 112.

The First Annual Medical Report of the Marien Hospital for the Poor in St. Petersburg, for the year 1836. By Dr. H. U. L. Von Roos, Chief Physician to the Institution, &c.

The Marien Hospital was established in 1803, by the Empress mother, Maria Feodorowna, for the reception of patients of the poor and necessitous classes of St. Petersburg, as well as for supplying medical advice and remedies to those among them labouring under diseases that permitted their presenting themselves at the hospital, either daily or at longer intervals, according to the nature of their

respective cases. The patients received into the wards of the hospital are denominated *stationary*, those who receive advice and medicine as out door patients, *ambulatory* patients.

When the hospital was first opened, provision was made for only two hundred beds, since then 131 beds have been added to the original number, and we are informed that by an imperial ukase the number of beds will shortly be increased to four hundred.

The whole number admitted as stationary patients from the establishment of the hospital in 1803 to the first of January, 1837, was 81,595; of these there were healed 55,978, and there died 13,145, or 4.49 per centum.

The document before us is the first official medical report that has been given to the public of the nature of the diseases treated in the wards of the Marien Hospital, and the general results of the practice there pursued. It is interesting in many points of view, as presenting a view of the diseases most prevalent among the poorer classes of the population of St. Petersburg, and their respective mortality; and in the general remarks affixed to the table of the cases under care during the year 1836, in relation to some of the more prominent affections, and the account of the remedies that were found most beneficial in their treatment.

In the year ending January 1st, 1837, there were received as stationary patients, 3426 individuals; of these 118 are described as persons of rank, and noblemen.

This class includes military and civil officers discharged from service, or who, from debt or misfortune, or the insufficiency of their salaries, are unable in case of sickness to pay for medical attendance, medicines and nursing. Individuals of noble birth, but without any possessions or property. The Dworänin and Polish "*Schlächta.*" Poor and unfortunate members of the different professions.

272 are described as discharged and pensioned under-officers and soldiers; 374 free persons, mostly poor mechanics, as well foreigners as natives; 1562 Boors, and 1100, the wives and daughters of all the foregoing classes; 322 patients (173 males, 149 females,) remained under treatment from the preceding year; making a total of 3748 stationary patients treated during the year 1836; of these 2511 (1676 m. 835 f.) were healed, and 927 (644 m. 283 f.) died; leaving 310 remaining under treatment on the 1st of January, 1837.

During the year, the number of ambulatory patients prescribed for, including those remaining from the preceding year, amounted to 42,769, (28,399 m. 14,370 f.;) of whom 23,548 (16,746 m. 6,802 f.) were healed; 3428 were stricken from the list of patients for irregularity of attendance, and 15,793 remained January 1st, 1837.

The lowest number of ambulatory patients prescribed for in any one day, was on the 29th of March, namely, 4 males, 3 females. The highest number prescribed for in one day, was on the 31st of May, 258 males, 39 females. The average daily number of ambulatory patients throughout the year was from 120 to 180.

From the table showing the nature of the diseases with which the patients of both classes were affected, and their respective results, which occupies 18 pages, we present the following abstract, omitting the diseases of the ambulatory patients, and such as remained under treatment at the close of the year.

Inflammations of various parts of the body, chiefly of the viscera, 336 cases; 223 males, 113 females, of which 91 died, and 245 recovered.

Fevers, including 243 cases of catarrhal fever, 10 of puerperal, and 223 of rheumatic, 1687 cases; 1161 males, 526 females, of which 354 died, and 1333 recovered.

Erysipelas, (18 cases affecting the face, and 11 cases gangrenous,) 72 cases; 42 m. 30 f., of which 18 died and 54 recovered.

Rheumatism, 99 cases; 58 m. 41 f.; all recovered.

Diarrhœa, 208 cases; 142 m. 66 f.; 54 died and 154 recovered.

Dysentery, 10 cases; 6 m. 4 f.; 2 died and 8 recovered.

Hæmorrhages, (8 from the lungs, 2 from the stomach, 4 from the uterus,) 14 cases; 5 m. 9 f.; 6 died and 8 recovered.
Consumption, 90 cases; 54 m. 36 f.; all died.
Hæmorrhoides, 7 cases; 5 m. 2 f.; all recovered.
Scurvy, 131 cases; 125 m. 6 f.; 45 died, 86 recovered.
Jaundice, 15 cases; 11 m. 4 f.; all recovered.
Dropsies, 235 cases; 142 m. 93 f.; 151 died, 84 recovered.
Palsy, 10 cases; 6 m. 4 f.; 7 died, 3 recovered.
Gout, 35 cases; 23 m. 12 f.; all recovered.
Chronic affections of the lungs, 48 cases; 29 m. 19 f.; 1 died, 47 recovered.
Chronic affections of the stomach and bowels, 18 cases; 10 m. 8 f.; 1 died, 17 recovered.
Chronic affections of the uterus, 4 cases; all females; 1 died, 3 recovered.
Convulsive diseases, 8 cases; 4 m. 4 f.; 4 died, 4 recovered.
Apoplexy, 4 cases, all females; all died.
Mental diseases, including 5 cases of delirium tremens, 12 cases; 9 m. 3 f.; 4 died, 8 recovered.
Small-pox, 3 cases; all males; 1 died and 2 recovered.
Abscesses and Ulcers, 184 cases; 102 m. 82 f.; 30 died, 154 recovered.
Burns, contusions, wounds, fractures, dislocations, chilblains, 159 cases; 108 m. 51 f.; 10 died, 149 recovered.
Anthrax and gangrene, 21 cases; 13 m. 8 f.; 9 died, 12 recovered.
Caries, 6 cases; 3 m. 3 f.; 4 died, 2 recovered.
Cancer, 9 cases; 2 m. 7 f.; 6 died, 3 recovered.
Indurated and *scirrhus mammæ*, 6 cases, *Palsy of urinary bladder*, 1 case; all females, and all recovered.
Contracted and *distorted limbs*, 8 cases; 6 m. 2 f.; all recovered.
Hemicrania, 3 cases; 2 m. 1 f.; all recovered.
Encysted tumours, 9 cases; 6 m. 3 f.; all recovered.
Paronychia, 13 cases; 8 m. 5 f.; all recovered.
Worms, 3 cases; 1 m. 2 f.; all recovered.
Mercurial tremor of limbs, 2 cases, both males; both recovered.
Fistula in ano, 4 cases; 3 m. 1 f.; 1 died, 3 recovered.
Calculus, urinary, 2 cases; 1 m. 1 f.; 1 died, 1 recovered.
Hip disease, 2 cases; 1 m. 1 f.; both died.
Marasmus of old age, 3 cases; 2 m. 1 f.; all died.
Incarcerated hernia, 2 cases; 1 m. 1 f.; 1 died, 1 recovered.
Abortion, 10 cases; all females; 8 cured, 2 died.
Aneurism of aorta, 3 cases; 2 m. 1 f.; all died.

The foregoing list gives 3496 cases; 2332 males, 1164 females; 900 deaths and 2590 recoveries; adding the number remaining, January 1, 1837, we would have 3806 stationary patients treated during the year, which is 58 more than the number given in the general statement. We can only account for the difference by supposing two or more of the cases to have occurred in the same individual.

The remarks which follow the table of diseases, in relation to the cases of parotiditis, which, during the months of March and April, were very frequently observed in the course of continued and remittent fevers; the very great number of cases of scurvy which presented themselves from the commencement of June to the middle of August, principally in males, with the remedies found most successful in their treatment; the frequent cases of encephalitis, both idiopathic and deutropathic, admitted from the months of August to November; as well as the observations of the author in relation to the cases of concussion of the brain, spinal marrow, &c., consequent upon falls from a height; of abortion, abscesses, angina, delirium tremens, diarrhœa and dysentery; exulcerations of the mammæ; of intermittent, nervous and typhus fever; of tetanus, &c., are all highly interesting; but the length to which our notice of Dr. Von Roos' Report has been already extended, will prevent us from presenting a translation of any portion of them to our readers, or attempting any other than a very brief abstract of the remain-

ing section of the report, "on the surgical operations performed during the year."

Lithotomy was twice performed; both patients were males, one of 12 and the other of 15 years of age. In both cases the operation was successful, and the patients were discharged well.

Lithotripsy was performed on a perfectly healthy male 19 years of age, who had been affected with a urinary calculus for six years. The operation was performed by Professor Bujalsky, on the 25th of April. The calculus was found to measure 12 lines in its shortest diameter. Within half an hour it was pierced in different directions, and reduced considerably in size; it was considered advisable to postpone to a future period an attempt to break it entirely up. Soon after the operation, there occurred a severe inflammation of the bladder and urethra, which was removed by an appropriate treatment. As the patient suffered much at every effort to void his urine from the retained calculus, at the end of three days it was proposed to repeat the operation, but upon attempting to introduce the instruments, so great a degree of sensibility was found to exist in the urethra and bladder, that Professor B. determined upon removing the stone by the lateral operation. Many fragments of stone were removed, one of which measured 13 lines in diameter. Subsequently to the operation, inflammation of the bladder again occurred, and the patient died on the 19th of May.

Amputation of the right forearm was performed upon a woman 54 years of age, in consequence of caries of bones of the forearm and wrist. The patient was discharged well.

Amputation of the right arm was performed on a man 20 years of age, in consequence of an abscess and destruction of the elbow joint, following a contusion of this part. Four months after the operation the patient died with hectic fever.

Amputation of the right leg was performed on a female 40 years of age, for an extensive ulcer with caries of the tibia near the ankle joint. Three months after the operation the patient died with hectic fever and colliquative diarrhœa.

Amputation of the right leg was performed on a lad 19 years of age, for caries of the ankle joint. The stump healed quickly. The patient remained in the hospital to the close of the year with an abscess of the sacral region.

Extirpation of scirrhus mammæ was performed in three cases. In all, the operation was successful.

Excision of inferior lip for cancer was performed in 3 cases; 2 m. 1 f.; in all, the operation was successful.

Suture of vesico-vaginal fistula; a young woman of healthy constitution, residing in a village near St. Petersburg; in her first labour, which was difficult, from the want of proper assistance suffered a rupture of the vagina and bladder, immediately behind the neck of the latter. Three months subsequently, she was received into the hospital with an oblong, transverse, vesico-vaginal fistula, into which the end of the fore finger could be introduced. The urethra was so contracted as to render it difficult to pass a middle sized (No. 6) elastic catheter into the bladder. Professor B., after paring away the fistulous edges of the opening, secured them in contact by two ligatures tied over a roll of linen. An elastic catheter was introduced into the bladder, through which the urine was allowed to pass for five days. The operation was, however, unsuccessful; the fistula continued, and the patient was discharged uncured.

Extirpation of encysted tumours was performed in nine cases; and *extirpation of a finger and a toe* was performed, each one time.

Operation for hydrocele, by longitudinal incision, was performed once, and successfully.

Trepaning. On the 28th of December this operation was performed for the removal of a caries of the os frontis. An unmarried female, 38 years old, was seized, towards the end of October preceding, with a nervous fever, accompanied with vertigo, stupor, loss of appetite, costiveness, and a sluggish condition of all the functions of the body. In the course of the fever a small ulcer appeared upon the left side of the frontal bone, at the edge of the hairy scalp. Of this

the patient made no complaint, and which attracted the notice of the physician in attendance only by the fungus granulations to which it gave rise. Upon recollection, the patient stated that she had been struck by a splinter of glass at the spot where the ulcer occurred, and by which she presumed it was produced; a probe introduced into the ulcer showed that the bone was bare and carious; an incision being made, it was found that an opening existed in the bone, through which a quantity of matter freely escaped. The diseased portion of bone was removed by the trephine. The dura mater beneath was found to be thickened and perforated by an opening, through which pus was discharged. Two days after the removal of the bone, this opening in the dura mater was enlarged by the knife, and the finger could be readily passed down to the substance of the brain.

The discharge of pus soon diminished; the wound assumed a healthy aspect, and the febrile symptoms under which the patient had laboured entirely ceased; but on the night of the 6th of Janunry, the patient suddenly expired.

Upon examining the brain a large abscess was discovered in the great anterior lobe, from which an opening extended forwards, passing through the dura mater and os frontis.

Condyloma clitoridis.—A soldier's wife, of a very sickly and infirm constitution, was admitted, three weeks after her confinement, with a tumour of the size of a man's fist, and of a bright red colour, extending beyond the external genitals. It was attached by a slender pedicle within the external labia, below their frenum, in the situation of the clitoris. According to the patient, this tumour had existed for a year, and probably longer. The external genitals, and the orifice of the vagina were studded with moist syphilitic condyloma. Prof. B. decided that the tumour was a condylomatous enlargement of the clitoris, of a very unusual magnitude. The patient was placed under an antiphlogistic treatment, which, at the end of three weeks, had to be discontinued in consequence of the extreme exhaustion of the patient. The tumour, which now appeared to be somewhat reduced in circumference, was excised (*ausgeschnitten.*) Soon after the operation a slow fever occurred, under which the patient sank on the 3d of July. D. F. C.

Art. XIX.—*Pharmocopœa Danica, regia auctorate a Collegio Sanitatis Regio Hafniensi edita.* Hafniæ: 1840.

Danish Pharmacopœia, edited, with the royal authority, by the Royal College of Health of Copenhagen. Copenhagen: 1840. 8vo., pp. 316.

This Pharmacopœia, like most other works of the kind, consists of two parts, the first containing a catalogue of medicines in the state in which they are purchased by the apothecary—the second giving formulæ for the preparations. It differs from some in offering brief rules for the collecting, drying, and preserving of vegetables, and for the various pharmaceutical operations, together with succinct descriptions of the medicines directed, and the prominent tests of their genuineness and purity. The work is in Latin; but the Danish names of the medicines are also given, so as to obviate the danger of mistake among those not well informed. The medicines which it is deemed necessary that every shop should be supplied with, are indicated by a sign prefixed to their names, while those of secondary importance are left unmarked. This is a good plan, though, as appears to us, inferior to that of two distinct catalogues adopted in the United States Pharmacopœia. The arrangement of the medicines is, as in our Pharmacopœia, strictly alphabetical; and we think that this, all things being considered, is the most convenient. The particular substances directed are mostly the same as those in use with us, but we observe some that are scarcely to be found in our shops, at least in the form of medicines. Among these may be mentioned formicæ or ants, out of which they prepare a tincture. The nomenclature is not such as we can altogether approve, the names of the chemicals being, in some instances, founded on exploded notions of their composition, and

numerous antiquated titles being retained which have been abandoned in the best modern pharmacopœias, such as balsamum opodeldoc, balsamum universale, balsamum vitæ Hoffmanni, elixir antarthriticum, emplastrum Manus Dei, morsuli contra vermes, &c., which, if not entirely rejected, should have been introduced merely as synonymes. The work is much less elaborate than the French Codex and some of the German pharmacopœias, but is somewhat fuller than those of Great Britain and the United States. Of the merits of its several formulæ, as those which are peculiar to it are not likely to be employed in this country, it is scarcely necessary to speak. They appear to have been drawn up with care, and are no doubt adapted to the wants of the country, whose pharmacy they are intended to regulate. G. B. W.

ART. XX.—*Lectures on the Theory and Practice of Physic.* By WILLIAM STOKES, M. D., Lecturer at the Medical School, Park St., Dublin; Physician to the Meath Hospital, &c. &c. Second American edition, with numerous notes, and twelve additional lectures. By John Bell, M. D. &c. Philadelphia: 1840. 8vo. pp. 692.

OF the character of Dr. Stokes's Lectures, our readers have had an ample opportunity for forming a correct estimate; the major portion of them having been transferred to our quarterly summary soon after their publication in the London Medical and Surgical Journal, where they originally appeared. They, unquestionably, possess throughout great merit,—presenting a concise, but at the same time extremely clear and attractive summary of the leading views of the most distinguished modern pathologists, especially those of the French school in relation to the phenomena, character, seat, diagnosis, and morbid anatomy of the several diseases, which they embrace; together with a very judicious and instructive exposition of their therapeutical management, deduced from the observations of the most enlightened and experienced practitioners of Europe.

The careful and cautious manner in which the several subjects of these lectures have been investigated by the author—his evident familiarity with the recorded observations and experience of his predecessors and contemporaries, as well as with the character, progress, and treatment of the several forms of disease described by him, from his own personal observations and experience, give to the expositions of Dr. Stokes, whether pathological or therapeutical, a degree of authority possessed by but few of the general summaries in our possession.

In the edition of these lectures before us, independently of a variety of important notes, more especially in reference to ileitis in connection with typhoid fever, sporadic dysentery, bilious colic, inflammation of the cœcum, the two last being diseases not embraced in the lectures of Dr. Stokes—hepatic abscess, encephalitis illustrating phrenology—softening of the brain, apoplexy dependent on hypertrophy of the heart; paraplegia, neuralgia, scrofula and intermittent fever—Dr. Bell has added twelve lectures on typhus, congestive, and the eruptive fevers, rheumatism, acute and chronic, and chronic laryngitis:—all of which, it would appear, to adopt the language employed by the editor in his preface:—

"Have been written in the same spirit with that of the original lectures—viz: an avoidance of speculative etiology, emphasis on diagnosis deduced from morbid anatomy, and a recommendation of therapeutics, simple yet energetic, so far as they are indicated by the phenomena of the disease, and the repeated enforcements of experience."

In relation to his lectures on congestive fever, Dr. Bell remarks, that, it is believed, they will be acceptable to his younger professional brethren, particularly to those residing in the southern and western states of the union.

"Even the fulness of description and occasional iteration of important points in pathology and therapeutics, as well as the remarks on collateral topics, especially the spurious hepatic pathology, and the mercurial practice will, he hopes, find favour in consideration of their aim and tendency, although they may not

have been discussed with entire success. It will not be thought presumptuous in him to have endeavoured to open the whole field of observation and inquiry on congestive fever, to correct serious misapprehensions of its character, and to prepare a way for its better treatment, by dwelling on once familiar but, of late, forgotten truths."

We feel great confidence, as well as pleasure, in recommending the present edition of Dr. Stokes's lectures as a valuable addition to the systematic works on the theory and practice of medicine now in general use—as well for the instruction of the student, as for the frequent reference of the medical practitioner.

D. F. C.

ART. XXI.—*New Remedies: The Method of Preparing and Administering them; their Effects on the Healthy and Diseased Economy, &c.* Prodesse quam conspici. Third edition, with numerous modifications and additions. By Robley Dunglison, M. D., Sec. A. P. S., Prof. Inst. Med. and Mat. Med. in Jefferson Medical College, &c., &c. Philadelphia: Lea & Blanchard, 1841. 8vo., pp. 538.

THE favourable opinion we expressed of this work when it first appeared, (see No. of this Journal for May, 1840, p. 172,) has been confirmed by the judgment of the profession, as is shown by the very short period in which the edition has been exhausted. In preparing a new edition, the author, as he informs us in his preface, "has subjected it to an entire revision, has modified in certain respects the arrangement, and altered the nomenclature so as to cause it to correspond more nearly to that adopted in the Pharmacopœia of the United States.

"In the space of time that has elapsed since the appearance of the last edition, opportunities have occurred for testing farther the value and the method of preparing many of the articles. The results of these observations have been added, and especial care has been taken to insert every novelty of practical interest to the physician and pharmaceutist. Fresh articles have likewise been introduced into notice, some of which constitute useful additions to the Materia Medica. These have been incorporated in their proper places; with other therapeutical agents that were omitted in the preceding edition; for example:—*Iodide of Ammonium, Iodide of Arsenic and Mercury, Cimicifuga, Lactate of Iron, Protocarbonate of Iron, and Monesia.*"

These changes have added to the value of the work, and cannot fail to secure for it an extensive circulation.

ART. XXII.—*The American Medical Almanac, for* 1841, *designed for the daily use of Practising Physicians, Surgeons, Students, and Apothecaries; being also a Pocket Memorandum and Account Book, and General Medical Directory of the United States and the British Provinces.* By J. V. C. SMITH, M. D., Editor of the Boston Med. and Surg. Journal. Vol. III, continued annually. Boston: Otis, Broaders & Co., 1841. 18mo., pp. 148.

THE volume of this work for the present year, contains a short account of all the medical schools in the United States; a number of interesting statistical papers; brief sketches of the sciences of Auscultation and Auscultatory Percussion, the former by Dr. Bowditch, of Boston, the latter by Dr. Macgowan, of New York; and several other short papers of interest.

The statistical account of the most important surgical operations performed in Hartford, Connecticut, for the last ten years, preceding January 1, 1840, by Dr. A. Brigham, affords some curious information, and which may, as Dr. B. observes, "serve to undeceive and benefit young physicians, who expect to obtain considerable income from surgical operations, and consequently neglect to

qualify themselves so thoroughly as they should, to perform well the other and every day duties of their profession, and upon which they must chiefly rely for support."

It appears that Hartford county contains 21 towns and numerous villages, and a population of over 50,000. During the ten years comprised in Dr. B's. account, there were performed in the county 22 amputations, ten of which were of the thigh, four of the leg, and eight of the arm; 5 operations of trephining, two for strangulated hernia, one for aneurism, a few amputations of the breast in females, several operations for hydrocele, and a considerable number for the removal of enlarged tonsils.

"Though the county is a healthy one," says Dr. B., "and comparatively but few poor people in it, yet the surgical operations alluded to have been mostly among the poor. Five of the ten persons who underwent amputation of the thigh, were too poor to pay any thing, and all but one, of those who had the leg amputated. But two of the eight cases of amputated arm were able to pay, and only *one* of those trephined. The cases of hernia occurred in poor people, but the friends paid a little. The case of aneurism was in a town pauper. The whole sum realized from all the above-mentioned amputations, trephinings, and operations for aneurisms and hernia, is less than $350.

"There are 76 physicians in the county, most of whom obtain a good support from their professional business; but as is very evident from the above account, they derive but little income from important surgical operations."

ART. XXIII.—*The Dublin Dissector, or Manual of Anatomy, comprising a description of the Bones, Muscles, Vessels, Nerves, and Viscera; also the Relative Anatomy of the Different Regions of the Human Body, together with the Elements of Pathology.* By ROBERT HARRISON, A. M., M. B. T. C. D., Member of, and one of the Professors of Anatomy in the Royal College of Surgeons in Ireland, &c., &c. First American from the fifth enlarged Dublin edition. With Additions by Robert Watts, Jr., M. D., Prof. of Anat. in the College of Phys. & Surg. in the city of New York. New York: J. & H. G. Largely. Philadelphia: Haswell, Barrington & Haswell, 1840. 12mo., pp. 541.

THIS work has enjoyed an established reputation in Great Britain, and we have little doubt that it will secure the same in this country. Some useful additions have been made by the American editor; and there is an Appendix, by another writer, containing "Directions for making dried preparations of the arteries and veins," which will prove valuable to the student.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Case of Palsy of the Face, illustrative of the Functions of the Lingual and Glosso-Pharyngeal Nerves.* By M. Vogt.—A woman between 30 and 40 years of age, corpulent, and in good health, contracted a paralytic affection of the left side of the face, in consequence of leaving her bed-room window open during the night. It is unnecessary to enter minutely into the details of the case; but it was distinctly recognized to be a case of paralysis, not only of the third branch, but of the entire trifacial nerve, with the exception, perhaps, of the muscular branch. Not only the chin and the half of the tongue, but all the left side of the face, were insensible. The conjunctiva of the left eye could not be irritated by means of needles; no tears were excited by this means. The external part of the ear was insensible to the touch, as well as a large portion of the posterior and lateral parts of the head. It was difficult to ascertain how far the muscular parts were paralysed. She said she could chew as well as ever; but whenever the mouthful escaped to the left side of the mouth she stopped chewing, as she was not aware of its presence there, and supposed that it had fallen out of her mouth. It is more than probable that the muscles of that side of the face had been paralyzed, and that mastication was effected by the unparalyzed muscles of the other side of the face; as mastication was performed very irregularly. One very remarkable circumstance was noticed, which was, that the left side of the tongue, though it had lost its sensibility, preserved its sense of taste quite entire. The woman was cured by means of electricity in six weeks.—*Edinburg Med. and Surg. Journ.* Oct. 1840, from *Müller's Archiv.*, Jan. 1840.

2. *Ganglia of the Human Heart.*—M. Remak, after having for a long time doubted the existence of nerves in the substance of the heart, has at length succeeded not only in demonstrating them, but also their nature; they are chiefly derived from the sympathetic nerves. M. Remak also discovered numerous ganglia, almost microscopical, in the substance of the heart of many of the domestic animals, and on extending his inquiries to that of man, found the same structures present there also. These ganglia he found in the transverse furrows of the heart, especially between the auricles and ventricles, where the nervous plexuses are met with. They are very small, but are easily recognized, by the microscope, to be ganglionic in their structure. It is from this peculiar structure, probably, that the activity of the heart, independent of the brain, may be explained. *Ibid*, from *Wochenschrift fur die gesammte Heilkunde*, 1839, No. 10.

3. *Case of Absence of one Lobe of the Cerebellum.*—Dr. Greene has recorded an example of this in the *Dublin Journ. of Med. Sci.*, (July, 1840,) occurring in a lad 20 years of age, who died on the twelfth day of fever in the Hardwicke hospital. The patient was well made and muscular, and had the perfect use of his limbs; but was deaf and dumb from his birth. The genital organs were well deve-

loped, and cicatrices of ulcers existed in each groin. The left lobe of the cerebellum was found to be altogether wanting; and the left *crus cerebelli* consisted merely of a small tubercle connected with the pons. The right lobe of the cerebellum and the corresponding crus were healthy. The *crus cerebri* of the left side was smaller than that of the right, and the annular protuberance, owing to the different development of its left side, was irregular in its form, and placed obliquely, its longest diameter being from behind forwards, and to the right side. The origins of the nerves were normal. The right occipital fossa was remarkably shallow, and the *foramen magnum* was placed obliquely, its antero-posterior diameter being thrown towards the right side. *Ibid.*

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4. *On the Anatomical Relation of the Blood-Vessels of the Mother to those of the Fœtus in the Human Species.* By Dr. John Reid.—In this communication, it was proved, by preparations laid on the table, that numerous tufts of the placental vessels pass through the decidua, and enter by the open mouths of many of the uterine venous sinuses of the mother. Some of these tufts only dip into the open mouths of the sinuses; others extend their ramifications half an inch, and even in some rarer cases, more than an inch from the point at which they enter. That these tufts found bathed in the maternal blood of the uterine venous sinuses, are prolongations of the fœtal placental vessels, was proved both by injection and by microscopic examination. Dr. Reid then proceeded to state, that on examining the placental vessels under the microscope, each minute branch of the umbilical arteries is bound up with a single branch of the umbilical vein, and that they go on dividing and subdividing in the same manner—each subdivision consisting of an artery and a vein so closely bound together, as to resemble a single vessel, when seen through the microscope in their uninjected state. All of these branches—each including an artery and a vein—terminate in blunt extremities, and there is no cellular tissue filling up the intervals between them. These blunt extremities, in which the branches of the tufts end, form the termination of the arteries, and the commencement of the veins. The inner coat of the venous system is reflected upon the placental tufts which project into the uterine sinuses, and is prolonged over the surface of all the placental vessels, forming sheaths enveloping each branch of these vessels, and thus constituting a kind of sac with numerous and intricate folds, or fringes projecting into its interior. Into this sac, the blood of the mother is poured by the curling arteries, and returns by the prolongations of the uterine veins. Each of the uterine sinuses into which the placental tufts project, may be considered a minuter representation of the structure of the placenta, for we have there fœtal placental vessels resembling the branchial vessels of aquatic animals, covered by a prolongation of the inner coat of the vascular system of the mother, and hanging in a cavity filled with maternal blood.—*Report of Proceedings of British Association for Advancement of Science*, in Athenæum, Oct. 3, 1840.

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5. *On the Anatomy of the Medulla Oblongata.* By Dr. John Reid.—The object of this communication was to point out the relative position of the motor and sensitive columns of the spinal chord, as they pass through the medulla oblongata and pons varolli, and the attachment of the different motor and sensiferous nerves to these columns. Dr. Reid produced preparations of the medulla oblongata, to show that the decussation of the pyramidal bodies is formed by the greater, and in some cases nearly the whole, of the fibres constituting each of these eminences passing into the posterior part of the middle column of the opposite side. None of these decussating fibres run into the anterior column of the opposite side, nor is there any decussation in the medulla oblongata; besides, on tracing the column which is connected with the clinary body, and which may be termed the clinary column, we find that as it passed downwards, it approaches closely to the anterior median fissure, immediately below the decussation of the pyramidal columns, and affords attachment to many of the roots of the motor nerves. On tracing this clinary column upwards, it is found to expand over the clinary body, affording origin to the hypoglossal and abducens along its anterior

margin, and to the parts close along its posterior margin. Part of this column passes upwards to the corpora quadrigemina, affording origin to the smaller root of the 5th and to the trochleator. Dr. Reid also pointed out how the spinal accessory and part of the filaments of the par vagum may be connected with the motor column.—*Ibid.* October 17, 1840.

6. *New Observations on the Structure of the Gastro-intestinal Mucous Membrane, and more particularly of the Gastric and Intestinal Glands.* By Prof. Allen Thompson.—This paper was illustrated by a series of preparations of the gastric and intestinal glands of man, and some of the lower animals. After giving a sketch of the recent progress of the investigation of the structure of the mucous membrane and its glands, and alluding more particularly to the researches of Boyd, Boehm, Bischoff, Purkinje, Henle, Wasmann, and Baly, the author gave a general description of the structure and distribution of the gastric and intestinal glands in the human subject at different ages, and in the following animals, viz. the pig, sheep, and ox, horse, dog, cat, and lion, badger, porpoise. The author then entered into a detail of some observations which he had recently made on the gastric glands, and on the solitary glands of the large intestine, from which he forms the conclusion, that at an early period of life these glands have all the form of closed vesicles, and that as life advances in the early years they gradually become open. The author then stated, that he had frequently observed distinct central apertures in the vesicles composing the glands of Peyer in the pig, sheep, horse, and occasionally, but more rarely, in the adult human subject, never, however, in the child nor young subject. The author stated his opinion that the apertures surrounding the vesicle in the form of a zone, do not lead into the cavity of the vesicle. The author gave a minute description of the structure of these glands, and concluded by calling attention to the three distinct points which formed the subject of his inquiry, viz. 1st, The closed vesicular origin of the gastric glands in the child, and their occasional vesicular structure at a more advanced period of life; 2d, The closed vesicular condition of the solitary glands of the large intestine at the period of birth, and the occasional occurrence of this condition at a more advanced stage, and 3d, the occasional open condition of the vesicles of Peyer's glands. He farther adverted to the bearing of these observations on the theory of secretion in general, more particularly that recently offered by Henle, on the probable uses of the intestinal glandular secretions in the economy, and on the changes of these glands in the diseased condition.—*Ibid.* 17th October, 1840.

MATERIA MEDICA AND PHARMACY.

7. *Oil of Ergot—the Mode of Preparing it—its Physical and Chemical Properties.*—Mr. Samuel Wright gives the following process as a convenient one for preparing the oil of ergot for ordinary purposes:—Digest the ergot in liq. potass. at a temperature of 120°–150°, until a perfect saponaceous solution be formed. The liquid is then to be diluted with half its weight of water, exactly neutralized with sulphuric acid, and submitted to distillation from a saline or an oil bath. The product is white, adhesive, and fatty-looking, almost free from empyreuma, and nearly tasteless.

The readiest and best, though unfortunately, the most expensive way of obtaining this oil, is, he says, by percolating ergot in a state of fine powder, with sulphuric ether. By allowing the ether to evaporate spontaneously, the oil of ergot is left in its purest form.

As thus prepared, he adds, it usually consists of two portions—the one, colourless and translucent, the other, having a reddish-brown hue. The latter character is an acquired one, and simply dependent upon the age of the ergot. In old specimens, the oil is coloured throughout, and often deeply; in recent ones, on the contrary, it is not unfrequently entirely free from colour.

Its taste is oily, and slightly acrid, its odour is similar to that of ergot, though more agreeable, and neither heightened by acetic acid, nor destroyed by long contact with a clear plate of copper or of iron. When heated, it blackens rapidly, acquires a disgusting empyreumatic odour, like that of an old tobacco pipe, and an acrid biting taste. If the heat be long continned, complete volatilization takes place; but if the oil be suffered to cool, it thickens, solidifies slowly, and ultimately becomes resinous.

By long exposure to light and air, at a moderate temperature, it assumes a reddish-brown colour, though it is little altered in either smell or flavour. The purple hue of ergot appears to be owing to the action of light and air upon the oil, aided by the free phosphoric acid. By mixing the colourless oil with flour and a little acid, and exposing the mass to air and sunshine for some weeks, I have succeeded in producing the distinct colour of ordinary ergot. It will be remembered that the latter, when growing, is never darkened so long as it is completely shielded by the glume.

Oil of ergot is of less specific gravity than water, and when these are agitated together, the latter becomes slightly odorous, and the former is rendered somewhat opaque. It is soluble in all the ethers, alcohol, naphtha, and bisulphuret of carbon, from which it is imperfectly separated on the addition of water. It is dissolved by all the essential oils, and mixes intimately with some of the fixed ones, particularly almond and olive oil. It is likewise soluble in kreasote, caustic alkalies, earths, and ammonia. With the latter substances, it forms a soapy solution, from which it may be separated by an acid. Sulphuric, nitric, and hydrochloric acids in the dilute form, have little action upon it, but, when concentrated, they convert it into a deep brown or black mass. When long exposed to light and air, at a moderate temperature, the oil thickens, deepens in hue, and diminishes in strength; yet, if kept in a stoppered bottle, it is patient of preservation, and will retain its activity for years. On this account, as also from the fact of its embodying all the active properties of ergot in a safe and manageable form, Dr. W. is persuaded it will be found a much more advantageous officinal preparation than the crude drug.—*Edin. Med. and Surg. Journ.*, July, 1840.

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8. *On the Hydrocyanoferrate of Quinine.*—Notwithstanding the valuable febrifuge virtues of the sulphate of quinine, it is well known that it occasionally fails. In such cases the hydrocyanate of quinine has been used with good effects. But as this is a salt subject to decomposition, Signor Bertozzi of Cremona, has proposed to substitute the hydrocyanoferrate of quinine, the powers of which over the worst forms of intermittent fever have been completely established.

Dr. Zaccarelli has prescribed this new medicine in a great number of cases in place of sulphate of quinine. It is found to cut short tertian and quartan fevers; and, what is well worthy of the attention of physicians, it has principally succeeded in cases where the sulphate of quinine has failed. Dr. Carioli has also confirmed the febrifuge properties of this preparation.

The following is given by Bertozzi as the most economical process for obtaining it. One part of sulphate of quinine is to be triturated in a glass mortar to an impalpable powder; a part and a half of the ferro-prussiate of potash, previously dissolved in six or seven parts of distilled water, is to be mixed by careful agitation, and the whole exposed in a flask to heat, stirring the mixture carefully until it arrives at the boiling point. In proportion as the liquid becomes transparent, there is precipitated to the bottom and sides of the flask a substance of a greenish-yellow colour, having an oily consistence. Having poured off the liquid portion, this substance is to be washed with distilled water, and then dissolved in very pure alcohol at 100° Fahr., and immediately filtered. On evaporating the alcohol, a mass, confusedly crystallized in needles, is left, the weight of which amounts to three-fourths of the sulphate of quinine used. This is the hydrocyanoferrate of quinine.

When in small fragments this substance is of a pea-green colour, and of an intensely bitter taste. It dissolves in cold, but better in hot alcohol, and is pre-

cipitated from its solution almost entirely by water. It is decomposed by sulphuric acid, and by the tincture, infusion, and decoction of cinchona. It has been given in doses of three grains and a half, repeated as occasion required.—*Dublin Journ. Med. Sci.* July, 1840.

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9. *Tonic Astringent Pills of Walch.*—The following is the formula for these pills:—℞. Terebinth, Venet. Extr. Gentian. āā ʒij; Ferri Sulphat. Kino āā ʒiss. M. To be made into pills of a grain and a half each. These pills are said to be very efficacious in the cure of gonorrhœa and of chronic leucorrhœa. The dose is four pills three or four times a day.—*Journ. des Connaiss. Méd. Prat. et de Pharmacologie*, June, 1840.

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10. M. Trousseau *on the Pommade Ammoniacale as a Vesicant.*—The formula in the French Codex for the preparation of *Gondret's* Ammoniacal Pommade is as follows:—Take of mutton suet one ounce, lard one ounce, and liquid ammonia (of 25° strength) two ounces. Melt the suet and lard in a wide mouthed bottle, and then, having added the ammonia, stopper it and shake the mixture well together. Keep the bottle closed in cold water—shaking it occasionally—until the pommade has become quite cold.

M. *Trousseau* observes, that the pommade made according to these directions, is generally much too hard and consistent for use, at least unless the weather be warm. He proposes two different formulæ, one for summer and the other for winter. The former is to use three parts of lard, one of suet, and four of ammonia; and the latter to use equal parts of lard and of the ammonia.

The *pommade*, which is met with in most druggists' shops in Paris, is far too weak, in consequence of its having been prepared with ammonia of insufficient strength, and probably also from its having been kept too long.

There may be another reason still: if the ammonia be added while the fatty matters are very hot, a great portion of it must be volatilized, and the pommade is necessarily weakened.

In applying this vesicatory, some recommend that a portion be put into a thimble, or in a short glass tube, and held firmly on the skin for some time, to prevent the escape of the ammoniacal vapour; while others advise, that it be spread directly on the part which is then covered with a small portion of diachylon plaster.

M. *Trousseau* disapproves of both methods, as "it is indispensable," he says, "that the effects of the application should be visible all the while." When first applied, the patient experiences a sense of coldness in the part; then a minute or two afterwards a slight burning heat, which gradually increases for three or four minutes, at which time it is at its maximum: it then remains stationary, and sometimes even begins to abate, although the *escharification* of the skin is going on all the time.

We must not, therefore, judge of the effects of the ammonia solely by the effects it produces.

The rule given by M. *Trousseau*, for regulating the length of time for its application, is to watch the appearance of the red circle around the part: whenever this is observed, the pommade should be removed. It is sometimes even not necessary or proper to wait until the red areola be observed, as the epidermis may be raised before it appears.

The length of time necessary for the pommade producing its full effects, varies much according to the part on which it is applied: sometimes it will vesicate in two minutes, at other times ten or twelve minutes are required.

As the inflammatory areola does not always make its appearance, M. *Trousseau* recommends that the pommade be wiped off at the end of five or six minutes, and re-applied if necessary; this may be repeated until the epidermis begins to be raised. We are never to continue the application until any appearance of a vesicle or blister is observed; but only until we find that the epidermis can be detached by rubbing it gently with the finger. We frequently find that it can then be removed in one piece, and that the chorion beneath can be fairly

exposed. *Now this is the very condition that is desired.* The dermis is not escharified in any degree; but continues to retain its absorbing energies, so that we may depend upon the success of any endermic medication that we may wish to try.

Should the pommade have been so long applied, that a complete bulla has been raised, it will generally be found that the dermis, from having been too much irritated, does not absorb very readily; and, moreover, that a cicatrix or mark is left after the blister has been healed. This latter consideration is not to be neglected, seeing that the pommade is so extensively used in the treatment of facial neuralgia in both sexes.—*Med. Chir. Rev.*, July, 1840; from *Journal des Connais. Méd. Chirurg.*

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11. *Lactate of Iron.*—This new preparation of steel has been extensively tried by some of the leading hospital physicians in Paris, and has met with their unqualified approbation.

The following extracts from a memoir by MM. *Gelis* and *Conté* will be sufficient to introduce it to the notice of our readers.

"Several reasons have induced us to select the combination of the protoxide with the lactic acid: this acid is widely diffused through the economy; there is, perhaps, not one part of the body which does not contain a notable quantity of it. *Berzelius* has detected it in muscles, in milk, and in all the secretions; the perspirable matter owes its acidity to its presence, and a considerable quantity is found in the urine. The solvent power of the gastric juice is perhaps mainly attributable to the presence of the lactic acid: the traces of the hydrochloric are, it is now generally admitted, very feeble.

"It must, therefore, be the lactate that is formed in the stomach, when any steel medicine is swallowed.

"It is easily prepared by treating iron filings with diluted lactic acid. The water is decomposed, hydrogen is evolved, and the oxygen combines with the iron. When the evolution of the gas ceases, the solution is filtered and then evaporated until a pellicle forms on the surface: the salt chrystallises on cooling.

"The lactate is not very soluble in water, and a high heat decomposes it. It is not readily affected by exposure to the air.

"It may be administered in the form of pastilles, drops, or lozenges: the sugar which enters into the composition of these prevents the further oxydation of the salt. The dose is from four to fifteen grains.

"The authors adduce several cases of chlorosis and other states of the system which are usually relieved by steel medicines, drawn from the practice of MM. *Bouillaud*, *Rayer*, *Beau*, &c. in which the lactate was administered with excellent effects: in some it succeeded after the usual ferruginous preparations had been fairly used without benefit.

"M. *Bouillaud* has reported most favourably of this new medicine to the Academy: he has used it in 21 cases, and in all it produced excellent effects. It seems to have a marked influence in increasing the appetite. The dose was from six to fifteen pastilles, (five centigrammes in each: perhaps each patient took eight or ten grammes in all.)

"Professor *Fouquier* confirmed the favourable report communicated by M. *Bouillaud*. He stated, as his opinion, that the lactate would become one of the most valuable and standard ferruginous preparations used in medicine."—*Med. Chirurg. Rev.* Oct. 1840.

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12. *On the Therapeutic and Chemical Properties of the Matias Bark.*—Dr. M'Kay presented to the Medical Section of the British Association for the Advancement of Science, a paper on this subject. The plant from which the bark was obtained, he stated, grew in great abundance in South America; but he was unable to give its botanical characters. From what he had heard he supposed it to belong to the genus Wintersonia. In its native country it was extensively used as a substitute for cinchona bark in intermittents. It was found to contain an intensely bitter extractive matter, to yield on distillation two distinct essen-

tial oils, differing in specific gravity, soluble in alcohol and æther, but very sparingly so in water. The principal characteristic substance derived from it was a bitter resinous matter; no alkaloid was discovered to exist in it. Specimens of the bark, its extract, the essential oils, tincture and resinous matter, were exhibited. The principal therapeutic properties were stated to be tonic, aromatic, and astringent. Dr. M'Kay also stated that it had been exhibited with marked success in dyspepsia accompanied by loss of appetite, which it quickly restored,—in phthisis, where tonics were admissible, in which it supported the strength, and prevented rapid sinking; in dropsy it was found to be a valuable adjunct to diuretics; in intermittents it was found to be a valuable substitute for the cinchona. It was also found serviceable in such cases of hemicrania, as permitted the use of quinine.

Dr. Newbigging, from extensive use of the drug, corroborated the statement made of its therapeutic virtues.—*Athenæum*, Oct. 1840.

13. *Therapeutic Effects of Croton Oil in certain Affections of the Nerves.*—Dr. Newbigging in a paper read before the British Association for the Advancement of Science, observed that for some time the only action the croton oil was supposed to possess on the animal economy, was that of active purgation, until Sir Charles Bell pointed out its effects on neuralgia. Not that it would be found to remove the affection in all cases, which was impossible in those depending on certain organic changes. He then detailed a number of cases to prove that it possessed a specific power over the nervous system, independent of its general action as a purgative. The diseases in which the power was exhibited were severe sciatica, which had baffled every other treatment; convulsions in children, and epilepsy, many cases of which it cured; and even in those depending on organic affections of the brain, it rendered the paroxysms less frequent and more moderate. In a case of severe laryngismus stridulus occurring in a child nine months old, Andral exhibited it in minute doses with complete success.

Dr. Abercrombie said he had long used it extensively in affections of the head, and from his experience of it he thought it might possess specific power over the nervous system. As the disease laryngismus stridulus was alluded to, he would mention a remedy he had found very valuable in its treatment, which was a combination of carbonate of iron and rhubarb with musk.—Sir C. Bell had found several forms of severe neuralgia, particularly occurring in the extremities, as in the finger or toe, over which croton oil had no power. It was in facial neuralgia that it proved most serviceable, or in neuralgia occurring elsewhere, accompanied by some indication of cerebral affection. When he considered the great extent of the intestinal track, and that those diseases may depend on sympathy with different parts of it, he was prepared to expect the necessity of using different purgatives which were known to act principally on different portions of the intestines.—*Ibid.*

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Ammonia a Cure for Drunkenness.*—M. Nonat has recently reported to the Medical Society of Paris, two cases of drunkenness successfully treated by ammonia given by the mouth and rectum. One of these had been bled and vomited, and his condition was almost desperate. Sixty drops of ammonia in two draughts cured him. M. N. saw at the Hotel Dieu, a man who had drunk a pint and a half of brandy; he appeared at the point of death. He was made to breathe the vapour of ammonia, and the fluid was given in injection, for he could not drink. The bowels were freely emptied and the patient was cured.

M. Prus also related the case of a man 60 years of age, who was taken to Bicetre dead drunk. M. P. saw him in the morning about nine o'clock and prescribed four drachms of acetate of ammonia in a glass of water. Before six

o'clock the patient was perfectly sober.—*Journ. des Connaiss. Méd.*, May, 1840; from *Bull. Gén. de Thérap.*

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15. *On Pain of the Back in Intermittent Fever.*—Dr. Kremer, of Aix-la-Chapelle, in a work on intermittent fever published in 1837, asserts, that in all the intermittent fevers he has had an opportunity of observing, there exists at the situation of the first dorsal vertebra, a more or less severe pain on pressure. In order to perceive the symptom, the pressure must be made from behind forwards, with the fingers upon the spinous process of the individual vertebra, not upon several vertebræ together; for in this latter case one bone is less affected in its relations with the others than in the former. If the intermittent fever is considerable, or old, or masked, pressure on the first dorsal vertebra, by giving pain, will suffice to evince the existence of fever. In simple or mild cases, the pain may be but trifling, and may require, particularly in phlegmatic individuals, that the attention shall be directed to it; and in order to render it evident, pressure should be first made on the first cervical vertebra, then on the last dorsal, and then lastly on the first dorsal, when the patient may be asked if he feels any difference in the sensations produced. The pain exists during the paroxysms, as well as in the apyretic interval, is stronger in epidemic than in sporadic intermittent fever, exists in all forms, and continues during the sequelæ.

Dr. Grossheim has examined fifty cases of intermittent, with a view of testing the correctness of the above opinion, and the following are the results of his observations:—"1st, pain on pressure on some part of the spinal column is a constant symptom of intermittent fever, except in those cases in which the ligaments of the vertebræ have become by age or disease so rigid that they will not yield to pressure. 2. There is no definite locality to this pain; it may be situated in any part of the column, but is most frequent in the middle of the dorsal portion, especially in quotidian intermittents. 3. The extent of the pain also varies considerably; one or two vertebræ only may be tender; and the pain rarely occupies the space of more than five or six; it may also be situated at distant parts, with intervals in which none is excited by pressure. 4. The intensity of the pain is equally variable. Sometimes it was so severe that the slightest touch of one of the spinous processes produced severe suffering; but sometimes violent pressure was required to detect it. Among those vertebræ that excited pain when pressed, the middle one was commonly the most sensitive; and in those above and below it, the tenderness gradually decreased. 5. The pain was more severe during the paroxysms than in the intermissions. When the severity of the fever diminished or the tendency to its returns grew less, the severity and the extent of the pain in the back also decreased; but the complete removal of the fever was not always accompanied by the entire loss of the pain, which often continued in a modified degree after the fever had ceased to return, and remained the longer the more severe it had previously been. 6. Complications of the intermittent fever did not appear to have any influence on the pain; it continued when the character of the fever was altered either for the better or for the worse, and it returned in cases of relapse.

From observing the constant resistance of this symptom, the author was induced to try what would be the effect of remedies that would tend to correct the local excitement that seemed to exist. He relates very briefly five cases, in which eight or ten leeches were applied over the spine in the situation where pressure gave the most pain. In four of these no other remedy was required; the pain ceased in a few days, and there was no recurrence of the febrile paroxysm.—*British and Foreign Med. Rev.*, July 1839, and Oct. 1840; and *Medicinische Zeitung*, 3d June, 1840.

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16. *On Softening of the Stomach in Infants.* By Dr. Iselin of Mulheim.—This disease was first accurately described by Dr. Jaeger, of Stuttgard, in 1811, in Hufeland's Journal. Since that period, various notices of it have been given to the public, particularly by Winter, Lenhossek, Chaussier, Laisné, Gairdner, and Wagner. It generally attacks children under one year of age, though it

is occasionally met with till they reach the age of puberty. It varies much in its duration, sometimes proving fatal within twenty-four hours, and at other times not for several weeks. It occurs both in the idiopathic and symptomatic form; the latter form being observed as a consequence or symptom of cerebral disease, acute eruptive disorders, or affections of the respiratory apparatus.

In the idiopathic form, the disease exhibits two distinct stages, 1st, of irritation, and 2d, of paralysis.

During the first stage, that of irritation, the child is observed to be restless and fretful for some days previous, when a smart febrile attack comes on, with quick pulse, dry hot skin, burning thirst, sleeplessness, violent vomiting, increased when any food is received into the stomach. These symptoms are rapidly followed by diarrhœa, the matters first passed being of a grayish colour and of considerable consistence, afterwards consisting of a yellowish acid serum. Writhing of the face is observed to precede the alvine evacuations, and they are also excited by pressure on the abdomen, which is usually much distended. There is great prostration of strength. The temperature of the abdomen, and particularly of the region of the stomach, is often much elevated, whilst the extremities are cold; partial sweats are observed, particularly about the head.

When the disease is more violent, it comes on very suddenly; the child faints frequently; the pulse is irregular and very quick; the eyes and features sink; the body is bathed with perspiration; convulsions at first slight, afterwards more severe, and strabismus are observed. The face assumes a blue colour; the diarrhœa and vomiting, which were first present, soon stop, or only one continues; the fits of fainting and convulsions become more frequent, and in one of these, the child expires.

Nearly the same symptoms are observed when this softening of the stomach is a secondary affection, only that then they are masked by the original disease, and are more apt to be overlooked, until they have gone on so far as to produce organic alteration of the structures of the stomach.

The above enumerated symptoms are not present in every case. The swelling and increased heat of the abdominal, but especially of the epigastric region, with the cold extremities, is perhaps, one of the most characteristic and constant symptoms. The swelling, once it has supervened, never disappears, and even after death, the form and position of the stomach may be recognized through the abdominal parietes.

The agonized expression of countenance peculiar to diseases of the abdominal region, as also the sunk appearance of the eye, are almost invariably present; even during the first stage of the disease, that of irritation; in the latter stage of the disease, they are peculiarly well marked.

The brain or its membranes were never observed by Dr. Iselin distinctly inflamed, but the blood vessels were often remarkably turgid. Cammerer, however, noticed various organic changes in the substance of the brain, and the *pons Varolii* and *medulla oblongata* very much firmer than usual. The lungs were usually turgid with blood, and in some parts exhibited traces of inflammatory action; and the same was noticed of the mucous membrane of the bronchi. In only one case was any thing approaching to softening of the tissues observed.

The abdominal cavity was distended by gaseous fluid, and the cellular tissue of its parietes emphysematous. The stomach was distended with air as well as the whole intestinal canal, and was often perforated in one or more points, or if not, was so much softened as to yield on the slightest touch. In the greater curvature of the stomach, especially at that part to which the spleen is attached, transparent discoloured spots were noticed, across which the fibres of the muscular coat could be distinctly seen; these melted away between the fingers, they were so much softened. This softening rarely extended beyond the lowest parts, though some observers have noticed it to extend to the whole stomach. Distinct traces of inflammation were occasionally observed surrounding these softened spots.

The softening appeared in every case to have extended from the internal to the external structures, and to have been caused by inflammatory action. In

the same stomach the appearances were often presented in different points of mere softening of the mucous coats, softening of the mucous and submucous and fibrous coat, and complete softening or perforation of all the textures.

The spleen was very generally softened and discoloured on those parts which were in contact with the stomach. The diaphragm was rarely affected.

The intestinal canal usually presented inflamed and softened spots; and in one case the duodenum was found completely softened, almost diffluent, as well as many spots and patches over the small intestines.

Dr. Iselin attributes the disease to inflammation, and not to a chemical erosion, as was supposed by Hunter, Cammerer, Jæeger, and others. The arguments in favour of the disease being owing to inflammatory action, are very strong, and at least prove that all the appearances could not be explained on the supposition of its being dependent on chemical erosion from the formation of an acid in the stomach. In a great number of the cases, and, above all, when the disease was raging as an epidemic at Gottingen, softening and perforation occurred simultaneously, both in the stomach, intestines, œsophagus, lungs, and mesentery. Such appearances could not have been presented, if they depended on the formation of an acid in the stomach, whether that acid was generated from the coats or the contents of the stomach or from the spleen. In fact, Dr. Iselin is inclined to think the disease may be cholera, modified by occurring in the infantile constitution.

The disease appears to be only curable in its first stage. When paralysis or convulsions once make their appearance, the case generally ends fatally. The strict antiphlogistic treatment is recommended: leeches to the abdomen and head. Vesications and sinapisms also were found efficacious, and after the bowels were cleared out by means of castor oil, other purgatives being found hurtful, slight astringents and bitters were administered. The disease was rarely stopped, in spite of all the remedies going on to its second stage and ending fatally.—*Edin. Med. and Surg. Journ.*, Oct. 1840, from *Archives Gén.*, June, 1840.

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17. *On the Epidemic Puerperal Fever of* 1838.—Two distinct forms of puerperal fever were met with by M. Voillemier; the first of an inflammatory, the second of a typhoid type.

The inflammatory form made its attack by a slight rigour, soon succeeded by intense pain in the hypogastric region, or in the *iliac fossa*, in general limited to one spot. General reaction soon succeeded, and the pulse, which during the rigour was depressed, rose to 130 beats in the minute or more. The skin became hot and covered with perspiration; the face became flushed; and the eyes lustrous. Frontal headach, often very intense, soon followed, and the breathing became hurried. This first period terminated by copious perspiration; occasionally, however, reaction did not commence till after the employment of copious depletion.

This form of puerperal fever in general yielded to the antiphlogistic regimen, though it occasionally terminated fatally; but it was by no means so intractable or fatal as the typhoid form.

The typhoid form of puerperal fever began with a long and severe rigour, which often came on a few hours after delivery. The pain in this form extended over the whole abdomen, and was often so intense that the weight of a cataplasm was insupportable. The abdomen became rapidly swollen; the pulse was feeble, undulating, very easily compressed, about 150 in the minute, often so quick as to be counted with difficulty. The respiration was hurried, and the anxiety extreme. There was intense frontal headach; the countenance was sunk; the face pale, and covered with a clammy sweat, which gave it the appearance of being varnished. Soon after this, constant purging and vomiting wore out the patient. The matters vomited were of a green colour, and the feculent discharges were very fetid. Death usually occurred at the end of a few days, sometimes of a few hours. The patients were generally sensible to the last.

In the inflammatory form the bowels were constipated, whilst diarrhœa prevailed in the typhoid type. In neither of the forms did the suppression or continuance of the flow of the lochial discharge, or that of the milk, appear to have any marked influence on the disease.

The morbid appearances were as follow. In 22 out of 24 cases purulent matter was found infiltrated in the sub-peritoneal cellular tissue, and in that of the pelvis. In two cases purulent inflammation of the lymphatic vessels, but of small extent, was met with. In three cases uterine phlebitis was noticed. The uterus itself was in most cases free from all marks of lesion. In a few cases small collections of purulent matter of the size of a pea were found scattered through its substance, but never an abscess of any size. These were in general nearer the external than the internal surface of that organ. Purulent infiltration was more frequently met with in the sub-peritoneal cellular tissue of the uterus, and that which occupies the pelvic cavity. This tissue, in fact, was in some cases so loaded with purulent matter, that when cut through it presented a greenish surface, and in many points abscesses of the size of a chestnut were met with. In six cases, the peritoneal coat appeared healthy. Various morbid appearances were observed on this membrane; its vessels were found injected, presenting various arborescent forms; its surface was found covered with a serous fluid, more or less transparent, but more generally puriform; purulent matter and false membranes were also often observed over its surface. In one case there was perforation of the stomach. In three cases abscesses in the muscular parts of the arm or leg were met with; in one case purulent matter was found in the elbow and wrist joints; and in six cases purulent deposits were noticed in the cavity of the pleura.

M. Voillemier could not distinctly trace these diseases to the direct action of cold or any peculiar atmospherical state. He, however, regarded as predisposing causes, close apartments, want of ventilation, an impure atmosphere, and elevated temperature; also insufficient or bad food, privations of all kinds, and neglect of the state of the body during pregnancy. He thought that in a few cases he could trace the propagation of the disease to contagion. Those who were delivered by means of instruments appeared to be more particularly subject to the disease. Of fourteen instrumental cases, six were attacked with this puerperal fever and four died.

M. Voillemier in conclusion, remarks, that "puerperal fever may be considered as a disease essentially general, of which the anatomical character consists in the existence of purulent matter in some part or other of the body."

As to the treatment, he places the greatest confidence in the antiphlogistic regimen; viz., the local and general abstraction of blood; cataplasms to the abdomen; injections when the lochia are fetid; and purgatives, especially in the inflammatory form. He thinks he has seen two instances of persons owing their lives to mercurial frictions. *Ibid.*, from *Journal des Connaissances, Méd. Chirurg.*, December, 1839.

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18. *Therapeutical Employment of the Oil of Ergot.*—Mr. Samuel Wright states that from a considerable number of trials made by himself and several of his medical friends, he is satisfied that the oil of ergot has the same therapeutic action as the crude drug.

"I have employed it," he remarks, "in nine different instances, where the exhibition of ergot was peculiarly indicated, and in all of them it answered most satisfactorily. In four of these cases, in which the contractions of the uterus were sluggish and imperfect, yet the *os uteri* sufficiently dilated, it produced very increased action in six minutes, and delivery speedily followed. In three similar cases, the same effect was produced within ten minutes succeeding the exhibition of the drug, and the termination was equally favourable. In another instance, where the pains had ceased without any evident cause, and the progress of labour was interrupted, it restored the contractions of the uterus in thirteen minutes, and within half an hour, an easy and a safe delivery was effected. In the ninth example, the pains were for the most part suspended,

from sudden terror with which the patient was seized; the pulse had risen from 75 to 130 beats per minute, and an alarming irritability of the whole system was prevalent. The administration of the oil in this case reduced the pulse to 90 in less than ten minutes; the irritability in a great measure subsided, and during a state of calmness the uterine contractions were vigorously and steadily renewed, and within an hour from the time at which the dose was given, parturition was fully completed.

"Dr. J. Y. Simpson, Professor of Midwifery in the University of Edinburgh, very kindly tried the oil of ergot, and his opinion of its efficacy is thus expressed, in a communication with which I was recently favoured by him. 'I have repeatedly employed your preparation of the ergot, and have always preferred it of late, because it has appeared to me to act with more precision than the infusion of the powder, and its dose is more easily regulated. I have used it both in cases of lingering parturition, dependent on deficient uterine contraction, and also in instances of *post partum* hæmorrhage. In one case of the latter, where the uterus relaxed, again and again, after the repeated introduction of the hand into its cavity, I gave your preparation in a large dose, (60 drops and repeated,) and very shortly afterwards the uterus began to contract firmly, and the woman, who was much reduced by the floodings, complained of the severity of her after-pains.'

"M. Meisser of Paris, to whom I sent a quantity of the oil, observes respecting it:—'I am much pleased with your preparation of ergot. I think it superior both to the infusion and the tincture. It has all the advantages, without the inconveniences of the former. It is easily regulated, does not offend the stomach, and operates with quickness and certainty. Since receiving your kind communication on the subject, I have employed it constantly, and it has ever equalled my desires. I have also recommended its use to many obstetricians, and they have found it most serviceable.'

"Two other friends, Dr. Gordon and Mr. Wilkinson, surgeons, inform me, that, after repeated trials, they are 'satisfied the oil is much superior to any other preparation of ergot.' In their use of it, 'it has never produced sickness, nor offended the stomach in any way; its effects have been rapidly and certainly developed; nor has any injury or inconvenience followed its repeated employment.'

"I have seen oil of ergot administered in two cases of retained placenta; in each it produced energetic contractions of the uterus, and was speedy in promoting the expulsion of its contents. I have also witnessed its good effects in an instance of violent flooding which succeeded delivery. Here it had the happy effect of calming the irritability of the system, rendering the pulse softer and steadier, and inducing a full and complete uterine contraction, upon the absence of which the previous loss of blood had chiefly depended.

"Besides the cases already mentioned, I may state that I have twice administered oil of ergot in troublesome diarrhœa, and with marked advantage. The dose was 10 drops every three hours, and both the patients were cured on the following day. It must be understood, however, that this remedy acts simply by subduing any inordinate irritability of the intestines, for it is not physiologically an astringent.

"I have also repeatedly given it in cases of irritability and cramp of the stomach, and have never known it fail to relieve or remove the symptoms.

"The dose of the oil is from 20 to 50 drops. It may be given in any convenient fluid vehicle, such as cold water, warm tea, or weak spirit and water. The two latter I have found to be the most serviceable; for the result of some comparative trials, which I have made, has been, that the action of the oil is best secured by administering it in a dissolved or tolerably diffused form.

"As an officinal article, the oil of ergot possesses many advantages which are wanting to the crude drug. It is of easy preparation, and may be kept for any length of time. I have a specimen which has been prepared for four years, and on trying it the other day, I found its activity to be in no degree diminished. The rules to be observed in its preservation, are simply to keep it in a well-

stopped bottle, and in a cool, dark place. An elevated temperature will volatilize it if there be any opening for it to escape, and if not, there is produced deep discoloration. The prolonged action of sun-light has a similar effect. In either case the strength of the oil is diminished.

"It is more easily and readily given than an infusion of the grain; it has a much less disagreeable taste, and operates with greater rapidity. It has also the very desirable advantage of rarely producing sickness. The nauseating effects of the common infusion are frequently complained of; and, not seldom, have they been a means of its popular condemnation. But the oil is in a great measure free from this objection. I have never known it to produce sickness or vomiting and similar has been the experience of my medical friends."—*Edin. Med. and Surg. Journ.*, July, 1840.

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19. *External Application of the Oil of Ergot.*—Mr. Wright has found this oil a valuable external application in cases of local rheumatism. He has tried it in three instances, and in all of them it has proved curative. The affected part should be well rubbed with it for a quarter of an hour, night and morning, until relief be obtained It is one of the best remedies with which he is acquainted for the cure of toothache. He has repeatedly known it subdue the pain when kreasote has failed. But perhaps its greatet value, as an external application, is in the arresting of hæmorrhage. He has often wounded small arteries in dogs and rabbits, and subdued the bleeding completely with a drop of this oil. Hæmorrhage from the jugular and femoral veins has been similarly arrested. The troublesome bleeding which sometimes follows the extraction of a tooth, and leech-bites, it is equally efficient in stopping.

In a severe case of epistaxis, he arrested the hæmorrhage, by injecting up the nostrils equal parts of very dilute spirit and oil of ergot; and he has little doubt that in the severe cases of flooding which succeed delivery, the injection of this oil diffused through water into the uterus, would be productive of the happiest results.—*Ibid.*

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20. *Solution of Bi-chloride of Mercury in Itching.*—Dr. Prus states, that he has often succeeded in the treatment of prurigo, an affection often obstinate, in the old men under his care in Bicètre, by means of lotions night and morning, over all the parts where the pruriginous papules exist, with a solution of bi-chloride of mercury, one drachm in half a pint of water.

Mr. Duparque employs with benefit the same solution in the pruritus of the internal surface of the labia pudendi, which occurs in some females in the decline of life, and which is often intolerable and difficult of removal.—*Journ. de Connaiss. Méd.*, May, 1840.

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21. *Experiments on the Mechanism of Inflammation.*—Dr. Robert Latour, details in the *Revue Médicale*, for January, 1840, a number of experiments which seem to demonstrate, that cold-blooded animals are not susceptible of the inflammatory process; and that, consequently, the experiments of Wilson Philip, Thomson, Hastings, Kaltenbrunner, Gendrin, and others, made on these animals, with the view of demonstrating the nature of the inflammatory process, go for nothing. M. Latour has in vain endeavoured to excite inflammatory action in carps and frogs, by applying various irritant substances to the skin, to the abdominal cavity, and to the other tissues of the body; and eighteen experiments are given in detail in proof of his statement. The following is a short abstract of the results:—

Deep incisions were made through the skin and muscular fibre of carps and frogs, and the wounds afterwards stimulated by the application of various acrid agents; as ammonia, concentrated acids, &c., which, though they caused great pain, were not followed by any reaction, either local or general. A peg of wood remained three days in the muscular fibres of a carp; pins were left several days transfixing the limbs of frogs; a piece of wood was left for thirty-six hours in contact with the mesentery of a frog; a piece of potato was for a much longer

time within the abdominal cavity of another; and a seton was kept in the thigh of the same animal for more than a month; the skin of a carp was cauterised with sulphuric acid; a red-hot iron was applied to the thigh of a frog; and yet in not one of these numerous and oft-repeated experiments, could the least appearance of inflammatory action be traced to the irritated wound; there was neither redness, swelling, sanguineous injection, nor suppuration. Nay, more, in those experiments where the muscular fibre of the animal was exposed, the redness which came on immediately after the incision was made, disappeared, and the wound filled with a glutinous matter, which served as the basis of the cicatrix. These animals were not, however, insensible to pain, as they showed by their writhings how much they suffered from the operations.

These results being in direct opposition to those arrived at by other experimentalists, M. Latour endeavoured to find out the cause of the difference. As it was chiefly on the frog that former physiologists had experimented, and it was from the phenomena observed in it that they announced they had developed inflammatory action, he repeated their experiments, and succeeded in producing a sanguineous injection, very visible to the naked eye, on the upper and inner surface of the thigh of a frog, by pinching it with a pair of forceps previously dipped in ammonia. He remarked, however, that these parts became covered with a tolerably abundant viscous sanguinolent secretion, and that the animal was seized with convulsions, and expired. M. Latour then discovered that the blood had been coagulated by the action of the ammonia, after having parted with its fluid parts, in precisely the same manner as happens to the blood of the frog when acted on by ammonia out of the body; as soon as the two liquids come in contact they lose their fluidity, and become a homogeneous blackish mass, of a plastic nature, and not easily broken up.

M. Latour inferred from this, that the redness caused by the ammonia was not of an inflammatory nature, but that it was the effect of the decomposition of the blood, which, being deprived of its fluid portions by its affinity for the alkali, was consequently stopped in its circulation by its coagulating within the vessels.

When a frog was plunged in salt water the skin was reddened, and the animal killed. In this case the blood was also decomposed, became more fluid, and the colouring matter was precipitated, and it is to this circumstance that M. Latour attributes the increased redness of the skin. The same peculiar colour was produced by mixing the blood of the frog with a solution of sea-salt.

Similar results followed the application of a red-hot iron to the webbed foot of the frog when placed in the focus of a microscope. As the red-hot iron was brought nearer and nearer to the web, the blood became coagulated first in the smaller vessels and afterwards in those of a greater volume.

These facts throw doubts on all the conclusions which have been drawn from the observations of experimentalists, on the excited vascular actions of the cold-blooded animals. M. Latour is inclined to the belief, that inflammatory action can only exist in those classes of animals where the temperature of the body is constantly in an exalted condition,—in fact, in the warm-blooded animals alone. Many of his opinions are too fanciful, and rest on too insufficient data to be further noticed.—*Edinburgh Med. and Surg. Journ.*, July, 1840.

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22. *On the Causes of Scrofulous Diseases.*—M. Lugol proposed to himself the question whether scrofulous diseases ought to be regarded as the result of accidental external causes, or that of a hereditary predisposition? And the conclusions to which he has arrived are the following:—

The accidental causes do not necessarily produce scrofula, at least it is very doubtful whether they are alone sufficient to produce the disease. The production of scrofulous diseases, however, by hereditary descent, is the most common and the most clearly proved, and which we are enabled to trace in the great majority of instances.

The appearance of scrofula in one child is a sure sign of the whole of the rest of the family inheriting the scrofulous constitution, by virtue of which all the

other children have the same original predisposition to the disease. If the families which betray the marks of inheriting a scrofulous constitution are observed with care, it cannot fail to be remarked that they are subject to a great mortality. Scarcely a fourth of the children who are born attain the age of puberty, and it is by no means a rare occurrence to find that families, originally very numerous, have been all cut off even before they reached this period of life. Scrofulous disease, in fact, is one of the most active causes of mortality of the human race; there is no other disease which cuts off so many or so young victims.

In his memoir, M. Lugol endeavours to show that parents who are at present apparently free from scrofulous affections, and yet beget scrofulous children, can, in almost every instance, be traced to have had brothers or sisters who have been affected with scrofulous diseases, or have themselves been the subjects of some scrofulous affection in early childhood. There have also been seen instances of scrofula appearing in the parents, after having had born to them scrofulous children. He consequently arrives at the conclusion, that hereditary diseases do not pass over a generation, as has been generally supposed.—*Ibid.* from *Comptes Rendus*, January 20, 1840.

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23. *Cayenne Pepper in Sea Sickness.*—A small teaspoonful of cayenne pepper, mixed in a warmed fluid, sweetened, and taken as soon as the sensation of sea sickness occurs, is said, in a communication in the *Lancet*, (August 8th, 1840,) to have immediately relieved the complaint in 18 passengers on board the New York packet ship Quebec. It may be worth a trial, though we fear, like the many other remedies which have been proposed, for the relief of this distressing affection, it will not always succeed.

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24. *On the Influence of Splenic Engorgements on Agues.*—It is quite unnecessary to do more than simply allude to the very great frequency of congestion and enlargement of the spleen after attacks of intermittent fever. The important question is, what is the effect of such a state on the health of the patient? and how is it best remedied?

M. *Bally* was the first to show distinctly that the marked tendency to the relapse of intermittent fevers, after they have been seemingly got rid of, is mainly attributable to the engorgement of the spleen which is permitted to remain. The fever may have quite ceased to return for one or even several months, but the patient, notwithstanding, does not recover his former health and strength; his complexion remains pale, his appetite is variable, his digestion is not good, and his muscular energy remains feeble; and at length the periodical feverish symptoms begin again to make their appearance.

In a recent lecture at the Hôpital de la Charité, M. *Nonat* has inculcated the opinions of his predecessor with much ability.

"We will not affirm," says he, "that hypertrophy of the spleen produces intermittent fever; this has its *point de depart* in some unknown cause, whether of the nature of miasm or otherwise, and inappreciable in its nature; but certainly it cannot be denied that such hypertrophy is an occasional and predisposing cause, which keeps the system under the influence of this primitive agent."

By far the most potent agent in subduing this enlarged state of the spleen is the Peruvian bark. But this must be given in larger doses than is usually done. It is more than probable that the frequency of the relapse of agues is mainly attributable to the insufficient administration of this most valuable specific. Such was the opinion of *Morton*, *Sydenham* and *Torti;* and the experience of the best practitioners in the present day confirms its truth.

M. *Nonat* remarks: "M. *Bally* was the first in France who distinctly pointed out the efficacy of quinine in the treatment of intermittent fevers, and more especially in those cases which are accompanied with considerable engorgement of the spleen. According to this experienced practitioner, we should commence with eight or ten grains of the salt every eight hours, and raise the dose quickly, if the case be obstinate, to 40 or even 60 grains in the course of the day. I have

seen M. *Bally* obtain, by this method, a success which it is vain to expect from the same remedy when administered in the usual manner."

M. *Piorry* assures us that under the use of large doses of quinine—from 40 to 80 grains in the course of twenty-four hours—he has seen considerable engorgements of the spleen subside in a few days.*

M. *Nonat* has investigated this subject of practical medicine with much zeal: and the conclusion at which he has arrived is, that the quantity of quinine required to effect a permanent cure of an ague, and of the induced enlargement of the spleen, is almost always in a direct ratio with the amount or extent of this enlargement. "After a great many experiments," he says, "I have satisfied myself that the dose of quinine should vary from 12 to 40 or 50 grains in the course of twenty-four hours, and that it must be proportioned to the increase in the size of the spleen; such are the doses which we have been in the habit, for the last three years, of using with such marked success. Hitherto we have met with very few cases indeed of enlargement of the spleen, which have resisted this method of employing the quinine."

The length of time, during which it may be necessary to continue the use of the remedy, varies much according to several circumstances, such as the extent of the enlargement, the duration of the complaint, the constitution of the patient, and so forth. But, whatever be the case, its employment should not be discontinued until the viscus has resumed its normal dimensions. In some cases, the stomach will not bear the large doses that are required; we must then administer the quinine in enemata, and in still greater quantities. To derive success from this mode of treatment, it is quite necessary that the enemata be retained; else all the febrifuge effects of the quinine will not be obtained. "When this condition is fulfilled," says M. Nonat, "I have in every case observed that the fever ceased, and the engorgement of the spleen subsided, as quickly as when the quinine had been administered by the mouth; and this too in patients affected with most obstinate agues which had resisted the ordinary plan of treatment in various hospitals."

M. *Nonat* does not expect much from the endermic use of quinine, as recommended by some physicians, the fever may indeed be cured, but not the splenic disease in this way. He has tried in a few instances the *iatroleptic* method, or that of rubbing the quinine in, in the form of an ointment. Forty or fifty grains of the salt were mixed with two ounces of lard, and the patient was directed to rub in some of this ointment on the groins and armpits three times a day. Under this mode of treatment, the fever has been known to cease, and the splenic enlargement to subside a little; but never to any considerable extent, or permanently.

Before closing these remarks, we should mention that, in most cases of ague attended with enlargement of the spleen, the local abstraction of blood, by cupping or leeches, from the left hypochondrium will greatly promote the efficacy of the quinine.—*Med. Chirurg. Rev.*, July, 1840; from *La Lançette Française.*

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25. *Tincture of the Muriate of Iron in Diabetes Mellitus.*—Charles Clay, Esq., of Manchester, records in the *Lancet*, (October 10th, 1840,) three cases of diabetes mellitus, successfully treated with the Tinct. ferri muriat. in large doses. The following is the formula employed: ℞. Tinct. opii. ʒiss; Tinct. ferri muriat. ʒii: Quinin. Sulphat. gr. viij: Aq. distil. ℥vj. M. An ounce of this was given three times a day. A strict diet of animal food was adhered to.

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26. *On the Sweating Regimen of Dr. Priessnitz at Graefenberg.*—For some years past a Dr. Priessnitz has acquired a great reputation over Germany for the success which has attended his practice for the cure of chronic diseases, and which has made his residence at Graefenberg visited by invalids from all parts

* Dr. *Elliotson*, in some of his clinical lectures reported in the Lancet five or six years ago, very forcibly inculcated the same views as to the treatment of the enlargements of the spleen, which so frequently follow intermittent fevers."—*Rev.*

of the continent. Dr. Bigel, Knight of the Legion of Honour, and one of the medical professors in the Imperial College at Petersburgh, has recently published an account of this regimen, under the title, "Manuel d'Hydrosudotherapie, ou Traitement des Maladies par l'eau froide, la sueur, l'exercice, et le regime." He seems to be an ardent admirer of the sweating regimen as pursued at Graefenberg, and, as he has derived personal benefit himself from its adoption, we may attach the more credit to his statements. Dr. Priessnitz is evidently a disciple of the old humoral school of pathology—and we believe that in this respect he is far from being alone either among his own countrymen, or his professional brethren in England and France—for he considers almost all diseases to arise from the existence of some morbid or peccant humours generated in, or introduced from without into, the blood; and his practice, founded upon this idea, essentially consists in using means to effect the expulsion of these humours from the system, and to replace them with healthy juices. These means are *water*, *air*, *exercise*, and *diet*.

The causes which, in his opinion, most frequently engender the unhealthy humours of the body, are the use of improper food, or the excess of what is wholesome, for the suppression of perspiration, the want of due exercise, the influence of various mental emotions, especially such as are of a depressing nature, the inhalation of a noxious atmosphere, the neglect of cleanliness, the use of stimulating liquors, &c.

His remarks especially on the neglect, as well by physicians as by unprofessional people, of the use of baths and other means to regulate the state of the cutaneous functions, are exceedingly pertinent: "We every day," says he, "see whole families purged and vomited by the order of their physicians, but rarely or never do we hear of their being recommended to wash their skins."

No one can find fault with Dr. Priessnitz's practice in this respect; in it there is certainly no want of washing both inside and outside man's "muddy vesture of decay."

"Ablutions," says he, "with cold water, are doubtless highly useful in promoting the cutaneous exhalation, a function so necessary for the preservation of health; and the drinking of cold water contributes not less powerfully to the same end, by preventing the *stasis* of the juices and impressing upon them a regular circulation. Again, it is no less important to expose as frequently and as freely as possible the body to the fresh air, since it is from this element that we derive the very principle of life, the oxygen. Just in proportion as there is less air, so there is less oxygen, and consequently the less of the principle of life is present." He insists very particularly upon the utility of drinking very largely of pure cold water. Copious libations of this element constitute a most important part of his regimen. In reference to other beverages, he says:—

"It is a great mistake to suppose that the use of pure cold water can be compensated by the drinking of tea, coffee, or thin beer, as is too commonly imagined; for it is not only as a diluent, and dissolvent of acrid matters in the bowels and kidneys, and as an attenuant of unwholesome juices in the blood, but also as a powerful means of communicating oxygen to the system, that pure water, taken in large quantities, acts so beneficially. In short, let any one try the effects upon him or herself of drinking freely and largely of the fair element, and he will not fail speedily to acknowledge that his health has been much improved."

M. Priessnitz is by no means a *starving doctor;* a fundamental principle of his treatment being to maintain the system in a state of vigorous strength. But then he is somewhat of an exclusive. He interdicts all spiced and highly-seasoned dishes, all hot peppers and other foreign spices, which may suit the natives of the countries where these grow, but which are not required in our climates, where the air, by being more highly charged with oxygen, is more stimulating. He permits the free use of our own vegetable productions, such as our various culinary herbs and salads, including radishes, mustard and such like stimulants, provided the patient is free from gout and cutaneous diseases.

Cold meats he prefers to hot, especially for persons with weak stomachs.

For breakfast and supper by far the best articles of food are bread, milk, and butter.

He does not restrict his patients as to the quantity of the food they take; Nature, he thinks, will seldom err, in this respect, provided the appetite is not provoked by condiments or stimulating liquors, and the person takes sufficient exercise.

The grand principle of his treatment consists in supplying the system with the means of deriving healthy juices from the food that is taken, while, on the one hand, all the poisonous and peccant humours are evacuated by regular copious sweating effected in the manner which we are about to describe, and, on the other, the system is fortified by the use of cold bathing, used while the sweating continues.

Our readers will observe that his practice in this respect is entirely analogous to that of the Russians, who, it is well known, are in the habit, upon leaving their vapour baths, of immediately, and while the body is drenched with perspiration, rolling themselves in the snow.* Dr. Priessnitz has probably derived the hint from this custom of his neighbours.

The following is his plan of a *sweating bath:*

The person, stripped naked, is inclosed in a long blanket, which is then to be wrapped close round his head, body and limbs, (the arms are to be kept applied to the sides, or folded across the chest,) leaving no part exposed but his face. The ends of the blanket are to be tucked up, as nurses do with the clothes of an infant, and the whole is then to be secured with bands put round various parts and tied.

The patient thus hermetically cased in his blanket, is to remain quite quiet—he may fall asleep if he chooses—until the skin begins to sweat freely. This seldom happens before the expiration of one hour, and frequently for not a much longer time.

By endeavouring to move his limbs up and down, and by rubbing his body with his hands as well as he can in his mummy-like wrapping, the tendency to sweating will be increased.

As soon as this commences, the window of his chamber is opened, and he is to drink, every quarter or every half hour, a glassful of cold water. This increases the perspiration so much that it often not only oozes through the blanket, but drips down on the floor. Sometimes not less than seven pounds may be collected in a vessel placed below the bed. The sweating is to be kept up for at least an hour; in certain cases for two, three, or even four hours. Some patients are subjected to this process twice in the twenty-four hours, at four o'clock in the morning, and again an hour or so after dinner.

When the sweating has been continued sufficiently long, the patient is then unswathed, and, covering himself with a cloak, he hurries to the bath, where, after first wetting his head and chest with the water, he plunges into the cold water, his body still streaming with perspiration. While in the bath, he should move about his limbs and exercise every part as briskly as possible, in order to promote a reaction in the cutaneous vessels.

Now this quick transition, from a state of profuse perspiration to the use of a cold bath, is not attended with any danger, such as is often the case if the body has been perspiring freely from violent exercise, or from the use of stimulating sudorifics. The important feature of M. Priessnitz's plan is, that the organs of circulation and respiration are not at all quickened or excited; they remain quite tranquil. Hence there is no sudden check given to these vital functions, and the body, instead of being chilled by the sudden transition, is invigorated and glows with warmth over its entire surface.

The greater that the cutaneous reaction from the use of the bath is in any case, the more favourable is the prognosis, and the more speedy will the cure of the existing disease be.

* The same impunity is observed in the eating of ices in tropical countries, when the body is perspiring freely, provided always the breathing is not quickened at the time, and gentle exercise is taken immediately afterwards.—*Rev.*

When the patient is unswathed to go to the bath, all that is necessary is only to drink a glass of water as often as he may feel himself much heated. For the same reason it is not requisite to wet the head and chest before plunging into the bath, except when this (the bath) is situated at some little distance, and when the outward air may possibly have somewhat closed the open pores of the skin. Let no one be sceptical of the truth of these statements.

Any one, who has visited the patients at Graefenberg, will be at once satisfied that there is not the least danger in plunging into a cold bath while the whole surface is sweating most profusely, *provided the breathing is not hurried at the time*.

If attention be paid to this one caution, there is little or no risk of any injurious consequences from the immediate transition from a state of profuse perspiration to immersion in cold water. But if the surface is permitted to be at all chilled, and the perspiration is in any degree checked by unnecessary delay, before the immersion takes place, a portion of the internal heat of the system, which is requisite for its due reaction, is lost, and then unpleasant consequences are often observed to ensue.

We again repeat that if these two precautions—viz: the preventing a quickened state of the breathing, and a chilled state of the skin—were more uniformly attended to, we should hear of fewer accidents from bathing when the body was heated or perspiring freely.

On leaving the bath, the body is to be well rubbed; and the person then dresses himself and takes a walk for half an hour or upwards, to keep up a uniform glow over the whole system. During this promenade, it is useful to drink a tumblerful or two of cold water.

In many cases the cold douche baths are used at Graefenberg with astonishing success, especially against chronic gouty, and rheumatic ailments. The patients always walk to them, for they are all situated at a considerable distance from the dwellings, exercise after their use being strongly recommended: during this exercise cold water is to be freely drunk.

There are various other ways in which cold ablutions are recommended by Dr. Priessnitz, such as the hip and foot bath, washing the head with cold water, and injections of it into the bowels. In short, cold water is the sole and only remedy that is used in almost every case. No other application is ever applied to any abscesses or outward sores, than linen dipped in cold water, and then covered with oil-silk or other means to prevent the evaporation.

The sweating regimen at Graefenberg induces, in very many cases, an eruption of boils on various parts of the body, these, when troublesome, are always treated with fomentations of cold water. Ointments are never used.

From the preceding remarks, our readers will see that the sweating regimen of Dr. Priessnitz is any thing but a feeble and ineffective practice. If there are peccant humours in the body when sick—and who will deny their presence?—and if these humours can be expelled by perspiration, then there is no *methodus medendi* comparable to the one which we have described as pursued at Graefenberg. The profuse sweating, induced in the manner which we have mentioned, is in every respect much preferable to what may be excited by severe bodily exercise, or by the internal use of any sudorific remedies. Then, too, the bold practice of immersing the patients while in a state of profuse perspiration into cold water must, if no evil consequences ensue from the sudden transition, most powerfully invigorate and harden the system.

Let it be remembered that copious libations of the pure element at the same time form a necessary part of the treatment. Dr. P. says that no patient should drink less than at least twelve tumblerfuls during the course of the day: some take as many as twenty-five or even thirty. In some obstinate cases, this practice has been continued for upwards of twelve months, and ultimately with complete success.

Exercise, also, is a necessary part of the regimen, as the vigour of the circulation cannot be kept up without it.

In conclusion, we shall briefly describe the regimen of a day at Graefenberg, as pursued by Dr. Bigel and other patients, under the direction of Dr. Priessnitz.

At four o'clock in the morning, a servant comes to roll you up in blankets. In summer you will probably commence to sweat in from half an hour to an hour. After having sweated for about a couple of hours you go to the bath. On coming from the bath, you walk about, and drink occasionally a glassful or two of cold water, until the breakfast hour arrives. When this is over, you again walk about and drink more water. About eleven o'clock you go the *douche* bath, and return at about noon, the hour of dinner. After this repast, the parties usually form themselves into different groupes either in the pleasure-grounds or elsewhere. About four o'clock is taken the last promenade, which may be called the sudorific one, as it consists in walking briskly up and down a hill, so as to encourage a very free perspiration. A cold bath is again taken; then a little exercise after the bath, and at eight o'clock supper is ready. A ball, a concert, or other promenade in the grounds closes the evening. Before retiring to bed, a hip bath is used, the wetted compresses are placed on his bed, and the person then lays himself down to sleep.

For the first week or ten days, the patients are not subjected to so severe a regimen as afterwards, when their constitutions have been in some degree prepared, and are already considerably fortified. The sweating, for example, is not continued at first for more than an hour, and they do not remain above from five to fifteen minutes in the cold or in the douche bath.

Even with these precautions the regimen is in most cases found to be very exciting, and to induce a considerable febrile reaction in the system, and not unfrequently also diarrhœa, vomiting, and the development of abscesses, boils, and other forms of cutaneous eruption. The number of boils that make their appearance is sometimes surprising; from fifty to a hundred have been counted in one patient. They are considered as so many issues for the discharge of the morbid humours of the system through the cutaneous exhalants.

When the number or size of these abscesses is great, an abatement of the bathing regimen is generally necessary: the douche and the plunge baths are to be used for a shorter time, as these are powerful agents in promoting the derivation of the humours in the system towards the surface; but the sweating part of the regimen is continued as before, because thereby a portion of the vitiated humours, which would otherwise be discharged by the abscesses, is got rid of by the exhalants of the skin.—*Méd. Chirurg. Rev.* Oct. 1840.

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27. *Cure for Corns.*—James Henderson, Esq., states that he has found the following to be a never failing remedy for corns: ℞—Tinct. iodine ℥ss; Iodur. Ferri gr. xij; Chlorid. antimon. ℥ss.—M. To be applied by means of a camel hair pencil, after the corn has been well paired. He has generally, he says, found three applications sufficient.—*Lancet*, April 18, 1840.

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28. *Chilblains.*—The diluted tincture of iodine is said to be a very good application to this troublesome malady.—*Med. Chirurg. Rev.* July, 1840.

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29. *Treatment of local Paralysis by Phsophorus.*—Several German writers very strongly recommend the use, internally as well as externally, of phosphorus in cases of paralysis of the optic and auditory nerves.

In a case related by M. Dezeimeris in his late elaborate memoir on diseases and injuries of the frontal sinuses, where deafness and blindness on the left side supervened upon a severe injury of the head, he resorted to this treatment with success.

He prescribed as follows:

℞. Phosphori gr. j, solve in
Olei animalis æther ℥j,
Olei caryophyll. ℈j.

Dose.—Three drops, to be gradually increased to 20, to be taken on a piece of sugar night and morning. And

℞. Phosphori gr. ij,
Olei animalis æther ʒj,
Olei cajeputi ʒss. Solve.

The eyelids to be well rubbed with this embrocation three or four times daily.

A blister also was applied upon the mastoid process and kept open.

In four weeks the patient had quite recovered his hearing and sight.—*Med. Chirurg. Rev.* Oct. 1840, from *L'Experience.*

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30. *On the circumstances which govern local Inflammatory Action, the effusion of coagulable Lymph, and the formation of Pus as a sequela of disease, accidents, operations,* &c.—Dr. Perry read a paper on this subject, in which he pointed out the phenomena of inflammation, its dependence on nervous energy, and the various opinions held by pathologists on the effusion of coagulable lymph, pus, &c.; he dissented, to a certain degree, from the opinions of Hunter, who deemed pus a *secretion* from the blood: as also from the theory of Gendrin, Carswell, and others, who hold that pus is formed from the fibrine of the blood itself, in consequence of its stagnation: neither of these opinions was considered by the author as satisfactorily explaining the phenomena. The generally admitted fact, that in those weak and strumous, and in those weakened by long confinement in an hospital, severe accidents, operations, difficult parturition, &c., inflammation was more easily set up in the system than in the strong, he considered a point of great importance, as explaining the source of local inflammatory action. It was observed by Dupuytren that of those who died in the Hôtel Dieu, after operations, the majority perished in consequence of inflammation of some internal organ, or of many organs at the same time. This accorded with the experience of the author, as inflammation, purulent depositions, &c., most frequently occurred after adynamic fevers, particularly when the brain and nervous system had suffered severely; as also after other contagious exanthematous fevers (none of which the author considered as inflammatory in the first instance). Tables were exhibited, which showed the result of 155 fatal cases, after fever, from which it appeared that local inflammation, with deposits of pus, &c., occurred in internal organs in a large proportion; and these results, so often fatal, the author stated to be the consequence of a change produced upon the blood and capillary vessels, by the previous shock or over excitement and innervation, and that the rapidity with which those products were formed might be taken as a test of the extent to which such changes in the blood and innervation existed; to remove such state by restoring the equilibrium of the system was the province of the physician.—*Report of Proceedings of the British Association for the advancement of Science. Athenæum.*

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31. *Pertussis.*—Dr. Hanny stated to the medical section of the British Association for the advancement of Science, that he had frequently found rubbing the chest with cold water, repeated two or three times in the day, with so much activity as to produce a rubefacient effect, of great efficacy in pertussis. This remedy might even be resorted to successfully, he added, where bronchitis existed.—*Ibid.*

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32. *Recurrence of the Menstrual Discharge at an advanced age.*—Dr. Peterson has recorded, in the *Bibliothek fur Læger*, February, 1840, the case of a healthy woman 79 years of age, who was seized with uterine pains which lasted a few days, and terminated by a hæmorrhagic discharge. The following month she was affected in a similar manner, and she has since, a period of twelve months, regularly menstruated.

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33. *Three Cases of Acute Inflammation of the Aorta.* By Dr. Thienfelder.—1, A mason, 35 years of age, complained for some days of palpitations, oppression, and sensation of burning heat in his breast, and a dry troublesome cough; and awoke on the 5th of November with great increase of all the uneasy symptoms.

On the arrival of Dr. Thierfelder, half an hour afterwards, he was found insensible, with stertorous very slow breathing, and cold extremities. In a short while he came to himself, and uttered a few unintelligible words. His body was swollen, of a bluish hue, and covered with a cold sweat; his pulse was very weak and soft; the action of the heart scarcely perceptible; and the respiration so slow that he scarcely breathed five times in two minutes. Fits of suffocation returned at intervals, and he died about three hours after being seen.

The lungs were found adhering to the pleura at some points, but were otherwise healthy, and no fluid was met with in the cavity of the pleura. The pericardium contained nearly fifteen ounces of serous fluid. The heart was filled with blood, the right auricle enlarged, but the ventricles appeared healthy. The *vena cava* and pulmonary veins were much distended with venous blood, but no morbid alterations were observed on them.

The ascending aorta presented the marks of violent inflammatory action on its inner coat; it was highly reddened and injected, and this appearance extended to its numerous ramifications; while numerous patches of plastic lymph adhered strongly to its surface.

The other organs were healthy.

2. An unmarried woman, 23 years of age, was seized on the 20th August, 1830, with a violent rigor, caused by a fright, followed by anxiety, oppression, and sensation of burning heat in the chest, violent cough, and bloody coloured expectoration, and considerable fever. Two days after this, palpitations of the heart, and fits of suffocation, with a constant dry cough, were complained of. It was then she was seen by Dr. Thierfelder. She had great anxiety, and was constantly groaning, and complained of a burning sensation and feeling of oppression at the upper part of the sternum, stretching towards the left clavicle, the neck, and the back. The respiration was hurried, and from time to time violent attacks of coughing came on, with fits of suffocation. The face was red and somewhat swollen, and the pulse was 160 in the minute, hard, but very small. She died on the night of the 22d.

The lungs were found healthy, only containing in their bronchial tubes a quantity of reddish frothy mucous. The pericardium contained nearly a pound of serous fluid. The heart was distended with black blood, but especially the right side, which was also paler and softer than usual. The left side, both auricle and ventricle, was firm, and appeared somewhat thickened. The internal membrane of the left ventricle of the heart, as well as that of the aorta, from its origin till opposite the third dorsal vertebra, as well as that of the coronary arteries, was reddened in consequence of inflammatory action. The internal membrane was considerably swollen in the aorta, so much so, that about a third of the diameter of the vessels was lost, and its surface was covered with an effusion of plastic adherent lymph.

The other organs of the body appeared to be healthy.

3. A clerk, 28 years of age, on the 24th of January, after washing himself with cold water, and sitting writing for several hours in a cold apartment, became chilled. He passed a restless night, and complained of rheumatic pains in his left arm and head. Next morning fits of suffocation came on, with a sensation of oppression and heat, together with a painful pulsating feeling at the upper part of the sternum, and of the left clavicle, stretching through to the back. The pulse was very quick, hard, and tense; the respiration was rapid; and he had troublesome fits of coughing. The abdomen was swelled, and painful to the touch; his tongue was dry, and he had considerable thirst.

Towards evening he got worse; the fits of suffocation were more severe; his body was swollen; his eyes injected and nearly insensible to the approach of light; his respiration very laborious; and his thirst almost unquenchable. He had also delirium. In addition to these symptoms, on the evening of the 26th he had ringing in his ears, which was much increased during the fits of coughing.

On the morning of the 27th these symptoms begin to abate. The oppressive sensation of heat and palpitation still remained; the pulse was still 170 in the

minute, hard and tense. Towards midnight, however, a copious warm perspiration, as well as a red miliary eruption, broke out over the body, and from that period he gradually recovered.

Acute inflammation of the aorta is always a disease difficult to distinguish. Dr. Thierfelder considers the peculiar cough which attends sufficient in most cases to declare the nature of the malady. He always found it very frequent and very hard.—*Edinburgh Med. & Surg. Journ.*, Oct. 1840; from *Ammon's Monatschrift*, April, 1840.

34. *Hypertrophy of Columnæ Carneæ.*—Mr. Adams found, on making an incision into the cavities of the heart of a man, who had been subject to violent paroxysms of dyspnœa and palpitation, in one of which he expired, the left ventricle almost entirely filled by the enlarged columnæ carneæ, two of which were particularly enlarged, as well as the *chordæ tendineæ* of the mitral valve.—*Dublin Journ. Med. Sci.*, July, 1840.

35. *Hooping Cough more than once in the same Individual.*—Dr. Wm. England states that he has now under his care a boy five years of age labouring under hooping cough, who had the same disease when about a year old. It is also said that a maternal aunt and uncle of this child also were twice affected with pertussis, first when infants but a few months old, and the aunt a second time when seven years of age, and the uncle a second time when forty-five years of age.—*Lond. Med. Gaz.* May, 1840.

36. *Strychnine in Neuralgia.*—Mr. Pidduck has employed strychnia in six cases of neuralgia, with so much advantage as to entitle the remedy to further trials. No benefit is of course to be expected from it, in cases of the disease where there is any mechanical cause of irritation affecting the nerve at its origin or along its course.—*Lond. Med. Gaz.* Aug. 1840.

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

37. *Congenital Dislocation of the Humerus reduced after sixteen years.*—By M. Gaillard, Surgeon to the Hôtel Dieu, of Poictiers. The following is an abstract of a report to the Royal Academy of Medicine, drawn up by MM. Cannet and Bouvier. They consider the case as very curious, and without a parallel in the history of surgery.

Mademoiselle L. B. a few days after birth presented a deformity of the left superior extremity with much pain during its movements. The elbow was thrown from the body, the forearm semiflexed, and the hand in a state of pronation. During her infancy she could not bring the elbow near the trunk, nor raise her hand higher than the chin. The limb was often painful during her early years; but latterly the pain had only come on when the limb had been long fixed in one position. When M. Gaillard saw her in 1836 she was sixteen years of age. He found in the posterior part of the shoulder a projection formed by the head of the humerus, which was placed in the subspinous fossa of the scapula, above the middle part of the spine, which was curved by the pressure it had undergone. On moving the arm, the head of the bone was felt rolling under the fingers, and it appeared abraded from rubbing on an irregular surface. The hand could not be brought to a state of supination. The forearm could not be extended on account of the permanent contraction of the biceps. Elevation and rotation of the arm were impossible.

On the 5th of January, 1837, the patient was placed on a stool, a cushion was applied to the external border of the scapula, and maintained by two cords passing from its extremities and attached to two fixed rings. The arm directed horizontally inwards was then submitted to the action of a weight of sixteen pounds. The weight was suspended at the end of a cord which passed through a fixed

pulley, and was attached to a bracelet fixed above the elbow. Time after time M. Gaillard increased the power of the traction, occasionally adding his efforts to the force exercised by the weights. The extension prolonged from twenty to twenty-five minutes was repeated on the 10th and 11th of January, each time bringing the head of the humerus nearer the glenoid cavity, and with no other inconvenience than a slight pain and swelling of the arm. On the 13th the head of the humerus was more moveable. Further traction was employed, the arm being always placed horizontally. The humerus yielded, glided over the scapula for the space of an inch and a half, and approached the glenoid cavity. M. Gaillard then seized the elbow, and by carrying it backwards and upwards he directed the head of the humerus downwards and forwards, then lowering the limb he felt the head pass under the acromial arch, and leap over a projection which appeared to belong to the articular cavity. The arm was now in contact with the trunk, it was sensibly lengthened, and all its movements could be executed with ease.

The dislocation, however, recurred again and again, and was as often reduced. The difficulty was to maintain the bone after reduction. This, however, was effected by careful bandaging. The patient suffered considerable pain at times, but was relieved by the application of leeches. From the first reduction to the entire cessation of pain a period of more than two years elapsed; but the cure was then complete, the patient using the limb equally as well as the other. *Bulletin de l' Acad. R. de Méd.*, June 30, 1840.

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38. *Dislocation of both radio-carpal articulations.*—Mr. N. J. Haydon has recorded, in the *Lond. Med. Gaz.* (Sept. 1840,) a case of this accident, which is of very rare occurrence, and the present one is further interesting from the curious circumstance that in one person from the same accident and from a force *applied in the same manner*, there was in one limb a dislocation of the carpus backward and in the other forward.

The subject of this case was a boy 13 years of age, who had been violently thrown from a horse, and fell on the upper part of the palms of both hands and on his forehead. The scalp was lacerated about two inches in length over the left eyebrows: the left wrist presented a considerable protuberance on its anterior aspect; the styloid process of the radius no longer had its position opposite to the trapezium, but was thrown before the carpus, and took up its residence on the scaphoid and trapezium: the ulna was dislocated from the radius, and rested on the unciform bone, the forearm was slightly bent on the humerus; the fingers similarly flexed on the hand throughout their articulations. During the reduction of this wrist the patient complained of no pain.

The right wrist presented a very considerable tumor on its posterior aspect, occasioned by the presence of the carpal head of the radius and ulna, and a very irregular knotty tumor terminating abruptly on its anterior aspect, caused by the presence of the bones of the carpus. The forearm was very considerably flexed on the humerus, and in a state between pronation and supination; the thumb strongly abducted; the metacarpal phalangeal articulations in a state of the greatest extension on the metacarpus; the two extreme joints slightly flexed. There was a strong aversion to have the arm moved, the slightest motion causing extreme agony: there existed in this arm no dislocation of the ulna from the radius. A very careful examination was made to determine what parts came in contact with the resisting force. Very extensive bruises were found on the palms of both hands, but not the slightest on the back of either hand. There was not the slightest evidence of any fracture existing, moreover within an hour after the dislocations were reduced the patient could rotate the hand, and supine it when prone.

Reduction was effected in the following manner: the left elbow being fixed, extension was made from the hand, at the same time gradually flexing the hand on the forearm. The right wrist, the elbow being fixed, was reduced by firmly grasping the thumb, the operator's thumb being applied over the outer part of its metacarpal bone, while his index-finger firmly embraced its ball; gradual

and direct extension was maintained for several minutes; when the carpus resumed its position, a very distinct and audible "*click*" was noticed by several persons present. Splints including the forearm and hand, with roller bandages, were applied, and retained for eighteen days, the parts being kept cool with evaporating lotions. The progress of the patient was altogether favourable. Seventeen days after the accident the splints were removed, the swelling having nearly subsided, and the wrists having regained sufficiently their power to admit of the usual movements of the hands being freely performed.

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39. *New Operation for the Cure of Vaginal Cystocele.*—By M. Jobert, Surgeon to the Hospital of St. Louis. The following is the substance of a report made to the Royal Academy of Medicine, by a committee consisting of MM. Blandin, Danyau, and Gimelle.

M. Jobert divides his memoir into three parts: in the first, he treats of the history of the disease, and the modes of treatment which have been hitherto employed for its removal. In the second, he proceeds to point out his method of obtaining a radical cure. In the third, he gives some new ideas, based on his pathological researches, with regard to the mode of formation of the cystocele.

Vaginal cystocle was treated of in the work of Leblanc, printed in 1775. Since that time, many surgical authors have noticed it; all have attributed it to a rupture or abrasion of the anterior wall of the vagina, allowing the bladder to pass into the cavity of the former, filling it by its distension, and causing a projection more or less considerable through the os externum. Until lately, palliative means alone have been adopted, which were totally incapable of effecting a radical cure. Pessaries under all forms can be but palliatives.

The well known operations of Marshall Hall, and Dieffenbach have been performed with success by Berard and Velpeau in cases of prolapsus uteri, in which the bladder and vagina have been also drawn down; by these means, the displaced parts may be retained within the cavity of the vagina; but in cystocele, M. Jobert says the bladder has an abnormal magnitude, and although it does not project from the vulva, it is, nevertheless, displaced, resting in such a manner on the perineal surface of the vagina, that the anterior wall of the bladder becomes superior. Thus, after the operation just named, though there is no external projection, the organ is not able to regain its ordinary size or position.

M. Jobert considers that in order to effect a radical cure, three things must be done: first, the bladder must be restored to its natural situation; second, the anterior wall of the vagina distended by the tumour must be reduced to its ordinary proportions, so as to maintain the bladder when replaced; but this latter result cannot be obtained by causing a loss of substance in this wall, and reuniting the edges according to the method of Hall, without injuring the orifice of the vulva. The proceeding has also entailed great difficulties in its execution, and possibly severe accidents, therefore the author substitutes, thirdly, the following method. He encloses within two curved transverse lines an oval space, more or less considerable, on the posterior surface of the tumour or the anterior surface of the vagina by means of caustic, so as to form an isolated spot, repeating the application of the caustic until the mucous membrane is destroyed. He then pares the edges with scissors or a bistoury, draws them together, and maintains them in apposition by means of straight needles, the points of which are removed, and a twisted suture.

Jobert operated in this manner on the 23d of July, 1838, on a female aged forty-five, of strong constitution, who presented at the aperture of the vulva a very large cystocele, which elevated the nymphæ and descended above the urethra and clitoris. The tumour was reddish. The patient easily returned and reproduced it. She often experienced acute pains in the abdomen, and the tumour became excoriated from friction. She had frequent desire to pass urine, the emission of which was often difficult. The tumour was five inches in length, from the orifice of the urethra to the neck of the uterus, and eight inches in circumference.

Seven needles were applied; four large and three small ones. They were

lance-shaped, and were contained in sheaths, which alone were left to retain the threads when the suture was made. One of the large needles was applied to each extremity of the oval, formed by the circumscribed space, two others in the middle, the small ones filling up the intervals. A sound of gum elastic was introduced into the bladder and left there in order to prevent the accumulation of urine, and the distension of the viscus. The reunion of the edges of the wound arrested the flow of blood, and no accident occurred. Four of the sheaths of the needles which retained the sutures were removed on the 3d of August, the others fell of themselves on the 5th and 7th. The sound was discontinued on the 20th of the same month. The woman returned to her occupation as a laundress, and at the end of the month of January, 1839, the time at which she was examined, nothing unfortunate had happened.

Since this time, two other cases presenting the same symptoms as that just related were operated upon in the same manner by M. Jobert, and the result in all the cases has been equally favorable. Two of the committee appointed by the academy were able to testify to this in one case.

But after the cure of these patients, the anterior wall of the vagina underwent a contraction throughout its whole length, and the uterus was proportionally prolapsed. M. Jobert now prevents this inconvenience by applying the caustic in a vertical instead of transverse direction. In this way the vagina is retained, and remains of its full length, the uterus suffering no displacement.

Jobert has shown by his pathological researches that the anterior wall of the vagina is neither ruptured nor abraded in the displacement of the bladder called cystocele, but that this disease is the result of the relaxation of the superior pelvic facia, which having been distended by the elevation of the womb in successive pregnancies, loses its elasticity and no longer sustains the anterior wall of the vagina after delivery in a proper manner; and in this case, a fall, an effort, the habit of retaining the urine in the bladder for too long a period and in too great a quantity, are causes sufficient to produce the disease.

Jobert performed the same operation with success in a case of eversion of the mucous membrane of the posterior wall of the vagina; and the committee are of opinion that it may be practised in similar states of the same tissue in other natural passages. *British and Foreign Med. Rev.*, October, 1840, from *Bull. de l'Acad. Roy. de Méd.*, May 15, 1840.

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40. *New Operation for Prolapsus Ani.* By M. Robert.—Relaxation of the sphincter ani being the cause of this disease, all the remedies hitherto employed for its cure are inefficacious when it arrives at the last stage, as they can only act on the mucous membrane of the rectum. These reflections have induced M. Robert to shorten the sphincter in proportion to the amount of relaxation, so that the two cut surfaces of the muscle might unite and form a narrow ring to oppose to the descent of the mucous membrane. This operation was performed with success on a washerwoman, thirty-three years of age, in June, 1839, in the hospital of La Pitié. This woman in her third pregnancy had a prolapsus ani, which was only temporary though it caused some pain. Her fourth pregnancy produced a prolapsus uteri, a permanent and considerable prolapsus ani, with relaxation of the abdominal walls. M. Robert excised a portion of the mucous membrane with some temporary relief; but the disease afterwards increased, the discharge of fæces became involuntary, and she suffered from pains in the loins and upper part of the thighs. When she entered the hospital the sphincter was so much relaxed that four fingers could be easily introduced.

The patient having been prepared for the operation by progressive diminution in diet, and the use of opium in order to effect long-continned constipation, M. Robert proceeded to operate in the following manner:—An inscision was made on each side of the anus, each incision being commenced a few lines external to the orifice, and carried backwards towards the coccyx. The fold of integument between the incisions, together with the portion of sphincter it covered, were removed, and the muscle was thus shortened by half its length. The wound was united from one side to the other by three points of suture. On the sixth day after

the operation the sutures were removed. Union was nearly complete, but a fistulous passage remained from the anus to the coccyx. On the fifteenth day the woman had not passed any fæces. On the next day the want of defecation being felt, in order to prevent any straining, the bowels were relieved by the curette. On the forty-first day the patient, who before the operation could not retain her fæces, kept an injection during the whole day; there was no more prolapsus; the opening had become of the ordinary size; but the finger when introduced did not experience the energetic contraction of the sphincter which occurs in the normal state. With the exception of a slight protrusion of mucous membrane the cure was complete in August.—*Ibid.* from *Gaz. Méd. de Paris*, June 20, 1840.

41. *On Certain Abscesses occurring in different parts of the Body, during the course of Diseases of the Urinary Organs.*—M. Civiale has observed that, sometimes during the progress of gonorrhœa and other diseases of the urethra, also in affections of the prostate gland and when there is stranguary or dysuria, or foreign bodies in the bladder, certain parts of the body, particularly the extremities and the larger joints, are attacked with pain, which may be dull and diffused, or acute and circumscribed, which is at first generally supposed to be rheumatic, but which terminates in the formation of large abscesses, differing in some respect from common phlegmons. M. Civiale states that these cases have escaped the observation of authors, but says that since his attention has been directed to them he has met with numerous examples. When these accidental pains first make their appearance, the patient complains of a peculiar "*empâtement*" (!) and numbness of the part, which come on before any swelling is apparent. These local symptoms are accompanied with lassitude, weakness, anxiety, and general constitutional disturbance which does not correspond at all with the degree of pain, which in the early stages is generally slight and diffused. As the case advances the pain becomes more acute, there is complete loss of appetite and sleep, great prostration of strength, the pulse being sometimes scarcely to be felt; rapid emaciation, dry tongue, troublesome cough, and lastly delirium. The disease often commences with a febrile paroxysm, which may return at regular intervals or be continued. Together with these symptoms the urine is often of a deep orange colour, and is excessively fetid, and when this state of the renal secretion is met with, the case is always very serious. Local redness and swelling of the painful part, with evidence of the formation of matter, frequently do not make their appearance till a late stage of the disease.

One peculiarity in this affection is a tendency in the local disease to shift its position, and it often appears in different places at the same time. The suppuration in distant organs is often accompanied also with the formation of an abscess in the scrotum, perineum, or neighbourhood of the urethra or bladder, which, however, form no communication with the urinary passages.

With regard to the causes of this disease, M. Civiale has not remarked any predisposing circumstances. All the cases occurred in adults. In four there was stricture of the urethra, during the treatment of which affection, (in one case, by cauterization, and in the three others by dilatation,) the abscesses were developed. In a fifth case there was serious disease about the neck of the bladder, and in several others there was urinary calculus, which had been broken down by the operation of lithotrity. In all the cases there seemed to have been some considerable irritation or inflammation of the urethra, or neck of the bladder, which appeared to give rise to the distant affection.

The peculiar state of the system, accompanied by the formation of these abscesses, is attended with considerable danger, and M. Civiale lost the first two patients which he treated.

The treatment found most efficacious was scarification of the whole of the affected surface in the early stage (from which a reddish or yellow coloured serum is generally discharged for several days in considerable abundance,) and then the use of emollient poultices. This plan will sometimes cut short the disease, but if the inflammation has reached the deep-seated cellular tissue of

the limb between the muscles, this texture becomes indurated, and a vast abscess soon forms; several large deep incisions must now be made completely through the affected parts which will allow of the escape of the matter, and also unload the distended vessels. The surgeon must not always wait for the sense of fluctuation to be apparent, before he makes his incisions, for great relief will be afforded by cutting through the inflamed and indurated tissues before pus has actually been secreted, and the progress of the disease may be thus arrested. M. Civiale does not make any remarks concerning the general or constitutional treatment of the patient, but we presume that this must be conducted on common principles.—*Ibid.* from *Bulletin Gén. de Thérap.*, April, 1840.

42. *New facts with regard to Strangulated Hernia.* By M. Laugier.—Every one knows that in strangulated hernia, the upper extremity of the intestine, or that part which is comprised between the stomach and the seat of strangulation, becomes distended by fluid, gaseous, or fecal matters, whilst the lower portion remains flaccid, or, at least, the matters found in it do not distend it more than usual.

No attempt has yet been made to draw practical inferences from this fact, so as to use it as a means of distinguishing intestinal from omental hernia; or which portion of the intestinal tube, whether the large or small intestine, was contained in the hernial sac. This has, however, been done by M. Laugier, who considers it both as a simple and sure means of diagnosis, besides possessing the additional advantage of indicating the relative urgency of the case for operation. The results of his observation are embodied in the following conclusions.

1. The extent, the form, and seat of the meteorism of the belly, during strangulated hernia, vary according as the hernia consists of omentum or intestine, and according as the upper extremity consists of the small or the large intestine. Its extent varies also according as the portion of small intestine included in the hernia is more or less distant from the stomach.

2. In omental hernia, before the development of peritonitis, the belly is soft, and flat even in the neighbourhood of the hernia. There is no meteorism.

3. Meteorism appears very rapidly when the hernia consists of intestine.

4. When the hernial sac contains the large intestine, the sigmoid flexure of the colon for example, the upper extremity consisting of nearly the whole of the intestinal tube, the meteorism is general, and gives to the abdomen an almost cylindrical form.

5. If the small intestine is alone in the hernial sac, or along with a portion of omentum, the flakes and the epigastric region are soft and depressed; the swelling of the abdomen occupies the hypogastric and umbilical regions. The swelling is spherical, or nearly so, resembling in this respect some encysted tumours, or the uterus at the sixth or seventh month of pregnancy, from which, however, it differs in many essential characters.

6. When the strangulated part of the intestine is near the stomach, the swelling of the abdomen is trivial, in proportion to the duration of the strangulation; for in that case the upper extremity of the tube is only of small extent.

7. From these facts may be deduced the unexpected and important conclusion, that in crural hernia, and in some inguinal hernias, where gangrene is most to be feared, all haste should be used either to reduce it by the taxis or by operation; for if by the occurrence of gangrene of the intestine an artificial anus should be formed, its proximity to the stomach renders it more dangerous for the patient. A swelling of small extent, limited to the neighbourhood of the hernia generally, inspires a security which may lead to fatal results; whilst it is the general meteorism, or one, at least, which is very extensive, that alone permits of delay, since it indicates the incarceration of a portion of intestine which is far from the stomach.

8. It is only before the accession of general peritonitis that the characters of the windy swelling, above indicated, can be relied on; they are most marked at that stage.

M. Laugier adds, that these remarks have been all verified by careful clinical

observation, and by the result of many operations for hernia.—*Ed. Med. and Surg. Journ.*, July, 1840, from *Comptes Rendus*, 2d March, 1840.

43. *Radical cure of Inguinal Hernia by the Horizontal Position.*—M. Ravin some time ago made known to the public his new mode of curing hernia radically, by merely confining the person, for a length of time, strictly to the horizontal posture, and applying over the abdominal ring gentle compression, &c. M. Biagini has lately verified this statement, by having had a patient who was afflicted with a large inguinal hernia, which had existed for two years, accidentally confined to his bed with another disease for upwards of three months. At the end of this period, when the man arose, to his delight, he found that the hernia did not return. No tumour was perceptible in the region of the inguinal canal, and he could cough and exert himself in every way without producing a return of the complaint. The man was 32 years of age.

This case confirming the views of M. Ravin, appeared to justify M. Biagini in drawing the following conclusions:

1. That it is possible to obtain a radical cure of some herniæ by the horizontal posture long continued.

2. That this cure takes place in consequence of a diminution in the size of the side of the canal and the contraction of its walls, which again assume the oblique course, which they had lost; which changes take place in virtue only of the tonic powers of the tissues.

3. That in order that the tissues should have sufficient tonicity to produce this important change, the person must be possessed of considerable vital energy; a circumstance which will prevent old men from being treated by this plan, both on account of their general weakness, and the danger of a long-continued horizontal posture to them; and lastly, it would be of no use in very large herniæ, where the canal is reduced to the state of a simple ring, and so altered, that no tonic force of the parts could restore it to its normal condition.—*Ibid.* from *Bulletino delle Scienze Mediche*, January, 1840.

44. *Foreign Body in the Larynx.*—A young child, while playing with common beans, allowed one to escape into the larynx. The usual symptoms of suffocation were immediately induced, but were calmed, as by enchantment, by the administration of a tablespoonful of olive oil. Whenever the symptoms of suffocation recommenced, they were found to be relieved by the administration of the oil; the operation of tracheotomy was therefore not performed, and on the fortieth day after the escape of the bean into the larnyx, it was coughed up in fragments.

M. Renauldin mentioned a curious fact with regard to the presence of a foreign body in the air-passages. On opening a body, a fragment of a nail was found in the lung; and yet no symptom existed during life, which could have led to the supposition that a fragment of iron was contained in these organs.—*Ibid.* from *Séances de l'Acad. Roy. de Méd.*, January 28, 1840.

45. *Successful Treatment of Dropsy of the Synovial Membranes by Tartar Emetic.* M. Gimelle has found the administration of tartar emetic in large doses very efficacious in curing dropsy of the synovial membranes; causing complete absorption of the fluid, with abatement of all inflammatory symptoms, if any exist. Twenty-seven cases of dropsy of the joints have been treated successfully by him. He, without any previous treatment, commenced by giving four grains of tartar emetic in the twenty-four hours, and increased the dose by two grains every day, till from eighteen to twenty grains were taken daily. As soon as toleration of the medicine was established, the fluid began to be absorbed, and the cure was in general complete in from eight to sixteen days.

In only five of these cases was vomiting excited by the medicine, in two cases for three days. In eight cases it produced alvine evacuations; but its most general and constant effects were diminution of the strength and quickness of the pulse, weakness of the voice, abundant nocturnal perspirations, and the ap-

pearance of a dark circle around the eyes. In almost every case the appetite remained unimpaired. M. Gimelle regards this plan of treatment as the most successful ever yet proposed for the treatment of dropsy of the synovial membranes.—*Ibid.* from *Bulletin de l'Acad. Royale de Méd.* July 4, 1840.

46. *Treatment of Syphilitic Ulcers by Ioduret of Iron.*—M. Baumes, chief surgeon of the hospital at Lyons, has of late used this new ferruginous preparation with most satisfactory results in the treatment of old and obstinate syphilitic ulcers, especially when the state of the system of the patient was at the same time feeble and scrofulous. He administered it in the form of pills with Thebaic extract, increasing the dose of the ioduret from two or three to twelve or twenty grains in the course of twenty-four hours. Along with the cicatrisation of the sores, the improvement of the general health was most remarkable; the appetite improved, the muscular strength increased, and the complexion acquired the florid hue of vigorous health. The salt, no doubt, is taken into the circulation, and acts on the blood itself, as well as on the capillary vessels in every part of the body.—*Med. Chirurg. Rev.* Oct. 1840.

47. *Compound comminuted fracture of the Elbow—cure without Amputation.*—The 3d of last January, M. Lallemand presented to the Society of Practical Medicine of Montpellier a man 32 years of age, who had been cured of a very serious wound. This man whilst at work, in February, 1839, in building a house, was struck by a large beam, which fell from a height of about twelve feet, and which caught his right arm against a stone and crushed a great part of the elbow. A portion of the fractured articular extremities of the ulna and the humerus had to be extracted, and the elbow joint was extensively opened. This workman entered the hospital seventeen days after the accident in order to undergo amputation. M. Lallemand, considering the robust constitution of the subject, determined to wait. Healthy granulations soon sprouted from the bottom of the wound, and the cure was complete at the end of three months. At the time of presentation, the humero-cubital articulation was anchylosed, but the superior radio-cubital articulation was capable of motion; nevertheless, nearly all the motions of pronation and supination were performed by the aid of the scapulo-humeral articulation.—*Lancette Française—Journ. de Soc. de Méd. prat. de Montpellier*, Mai, 1840.

48. *Memoranda on Cutaneous Transplantations.*—When erysipelas comes on in the face after a rhino-plastic operation, it is usually arrested at the edges or limits of the restored part. This was especially remarkable in the case of a patient operated on by Dieffenbach, at the hospital St. Louis in Paris.

M. Ricord also has published a similar instance. On the seventh day after the operation, the patient began to experience pain under the chin, and at this part an erysipelatous redness was visible. Next day this had extended over the entire face, the newly-made nose alone remaining intact; it was cold, insensible, and, as it were, indifferent to what was going on all around it. Although the local inflammation was very severe, it was ultimately subdued; yet at no time did the new nose participate in it.

Dieffenbach mentions that one of his patients, on whom he had operated, was attacked with jaundice, during which the entire face—with the exception of the nose, which remained white—became as yellow as a guinea.

M. Phillips insists very particularly on the necessity of keeping the newly-formed organ very cool with refrigerant lotions, and even of drawing blood freely from it as well as from the adjacent parts, and never of applying—as has too often been done—spirituous or other stimulating washes for the purpose of exciting the circulation. The condition of the transplanted tissues seem to be very nearly analogous with that of frost-bitten parts; in the case of which, it is well known, the application of heat and exciting substances must be carefully avoided. As illustrative of the same fact, M. Phillips goes on to state:—

. . . . "Dieffenbach remarked that in cholera patients, who recovered,

the healing of wounds was effected with greater rapidity than in persons in perfect health; as if the diminished activity of the cutaneous circulation rendered it better fitted for any plastic processes. He observed that the wound bled very little, if at all, the dermis being almost void of blood; and that the edges of the incision were not red as usual, but rather of a yellowish-red colour. . . . . Again, if we call to mind the surprising unions of parts which have been entirely separated from the body, are we not led to conclude that the immediate union of wounds will be the more readily effected just in proportion as the parts are the least gorged with blood? The management, therefore, of rhino-plastic injuries should be so directed as to bring and keep the tissues in this state of vacuity."

M. Phillips proceeds to point out an error which is too commonly committed by most surgeons in the treatment of recent wounds, that of bringing the edges in contact as quickly as possible after their division, and before the oozing of blood has ceased. Now, it is not until this has quite stopped, that the secretion of the coagulable or plastic lymph commences; and it must surely be obvious that, if any coagula of blood are interposed between the lips and the wound, the agglutinative process must necessarily be impeded. Dieffenbach observed, in some experiments which he performed on rabbits, that the chances of union, after the transplantation of a portion of the integuments, were always greater when the flap was not replaced for several minutes after it had been excised.

"In most of the cases, too, of successful union of detached noses or fingers in the human subject, some time has accidentally elapsed between the occurrence of the accident and the re-application of the part."

. . . . . "That a vitality continues for a considerable time in parts detached from the body, is often very apparent after some operations.

"Thus in a case of hydro-sarcocele, where Dieffenbach removed a large portion of the skin along with the diseased mass, he noticed that, in about a quarter of an hour afterwards, this portion of skin had contracted upon itself, so as to exhibit the usual puckered appearance of the scrotum on leaving a very cold bath. On stretching it out, and pouring cold water upon it, it again contracted into numerous wrinkles."

M. Phillips proceeds to state that—

"When a part is entirely detached, its natural red colour disappears, and it becomes very pale, although very little blood has flowed from it. The vessels of the surface contract, and drive the blood into the sub-dermoid tissues. In a few minutes after the separation, this great paleness diminishes; some dark blood oozes from the divided edges; and we may ascertain with a magnifying glass that it is expelled by the contraction of the vessels. If the blood be wiped away, the wound again becomes red; but the blood is now thinner, and if again removed it becomes quite watery, and the edges begin to be coated with coagulable lymph; they then contract upon themselves, so as to cause the centre to bulge out."*

Should the hæmorrhage from any of the divided blood-vessels, after autoplastic operations, prove troublesome, *tortion*, and never the *ligature*, should invariably be had recourse to. The presence of a ligature, however minute, is always most unfavourable to immediate union. If the stopped blood-vessel

* The convexity of the flap exists even after the most successful union; it is the more decided when the substance of the flap is thin, and much less so when a layer of muscular substance has been detached at the same time.

This tendency of the flap to contract around its edges, so as to cause the centre to become convex, is of great utility in rhino-plastic operations; as it is by this invariable law that the surgeon is able to secure a proper prominence to the new nose. When a flap has a free edge, which is not brought and kept in contact within another incised surface, this edge turns inwards upon itself and contracts very close adhesions. It is in this manner that the nostrils of the new organ are apt to become quite obliterated, if precaution has not been taken to evert and secure by a stitch or two a portion of the flap, so as to induce an immediate union.

seems gorged with blood after the hæmorrhage has ceased, one or two scarifications should be made, to remove the sanguineous congestion; which we have already explained is very prejudicial to the success of the reparative process.

M. Phillips thus points out some of the anatomical conditions of the flap taken from the forehead in a rhino-plastic operation, on which its success very materially depends.

"It is indispensible that it should contain one artery at least. Hence the importance of prolonging the incisions to the angle of the eye, so that the pedicle of the flap contains the internal angular artery to supply it with blood. And then again, it is equally necessary that the blood, which is conveyed to it by the arteries, should be returned by veins, else the new nose will perish from congestive asphyxia. Indeed it is wonderful that this does not occur oftener than it really does, when we consider that not only are almost all the direct communicating branches between the arteries and the veins cut across, but that the blood in the divided arteries is prevented, in a great measure, from escaping, in consequence of the compression of the edges of the flap by the numerous sutures used to retain it in position."

"The destruction of the flap may arise from three different causes—from defective circulation, from excessive or superabundant circulation, and from suppuration.

"If the pedicle be twisted too firmly, the vessels must necessarily be compressed, and the circulation through them be consequently more or less interrupted; the flap in consequence becomes pale, loses its heat, and speedily mortifies. But this does not occur so frequently as the mortification from accumulation or congestion of blood in consequence of its obstructed return through the veins. Under such circumstances, the mortification usually takes place in that part of the flap which is furthest distant from the pedicle.

"After the asphyxia now described, suppuration is the most formidable evil to be dreaded in the management of rhino-plastic operations. The destruction commences at the edges, which swell, puff out, and separate from each other. This calamity is more apt to occur when the twisted suture has been used."*—*Med. Chirurg. Rev.* July, 1840, from *Bulletin Méd. Belge.*

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49. *Therapeutic Considerations on Obliterations of the Veins in the Treatment of Varix and Varicose Ulcers.*—M. Jobert relates in the *Bulletin Gén. de Thérap.* for May, 1840, six cases, and he says that he could describe twelve others, in all of which the treatment of varicose veins by producing the obliterations of their trunks by needles and twisted sutures, or other means, though at first it seemed promising, had ultimately proved completely unsuccessful. In all the patients who were thus treated the varicose ulcers returned a short time after they left the hospital, as it was believed perfectly cured; and the return took place in these cases more rapidly than in all probability it would if only the ordinary treatment by rest, poultices, and bandages had been pursued.—*Brit. and For. Med. Rev.* Oct. 1840.

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50. M. Guerin *on Subcutaneous Wounds.*—Every one has heard of the proposal, or rather now the practice, of M. Guerin of Paris, in the treatment of lateral curvatures of the spine—the subcutaneous division of several of the muscles of the back.

From what he recently stated to the Royal Academy, he has met with extraordinary success. "I have, in nearly fifty cases, divided more or less completely most of the muscles of the back and spine—viz: the trapezius, the

* If the destruction from this cause be considerable, it may be necessary to perform a second operation, and re transplant a fresh portion of healthy integument. But if it be only at one angle, we may succeed by the repeated application of the tincture of cantharides, in exciting the granulating process sufficiently to fill up the ulcerated space.

rhomboideus, angularis scapulæ, sacro-lumbaris, and longissimus dorsi. In each of these operations the wound of the muscle has been from three to four inches in length, and sometimes from one and a half to two and a half inches in depth, when the sacro-lumbaris and longissimus dorsi muscles were completely divided: in those cases where the trapezius and rhomboideus were entirely cut across, the bistoury traversed at least from four to five inches, or more, under the skin.

"In almost every one of these cases, no local inflammation nor constitutional feverishness supervened, and by the third day many of the patients were able to rise up and walk about without support. This most pleasing exemption from the accidents which so often follow upon ordinary wounds, is entirely attributable to the circumstance of the air not coming in contact with the freshly-divided surfaces: the tendency to inflammation seems scarcely to exist, and the parts commence and complete the reparative process without interruption or pain."

In addition to a multitude of experiments performed on dogs, M. Guerin has established the perfect innocuousness of subcutaneous wounds in operating for the relief of various forms of distortion. He has divided the sterno and the cleido-mastoid muscles (separately, simultaneously or consecutively) for wry-neck twenty-five times: in every one of these cases—the section having been made under the skin—the wound healed without the smallest trouble. Occasionally the operation was effected with considerable subcutaneous effusion of blood; but this was usually absorbed in twenty-four hours or so, and the reparative process then rapidly took place. Again, the operation of dividing the tendo-Achillis for club-foot he has performed upwards of 200 times; and in all these also he has been equally successful. In the practice of other surgeons, indeed, inflammation and suppuration has followed this simple operation, but these troublesome consequences are, we suspect, always owing to the outer wound having been made too large, and the air having thereby been permitted to enter.

"That such is the case is surely sufficiently proved by the success which has attended my operations. I have now performed the subcutaneous section of different tendons and muscles in upwards of 500 cases; and in not one instance has any troublesome inflammation of the wound supervened."

The great object, therefore, of the surgeon should be to prevent the entrance of the external air into the wound.

"From all these circumstances," continues M. Guerin, "I infer that subcutaneous wounds so quickly heal in consequence of the exclusion of the external air; and that it is from this fluid (the air) neither physically obstructing the circulation, nor chemically modifying the properties of the blood, nor altering in any degree its vital constitution, as well as from its not exerting any hurtful influence on the nerves and other parts which are protected from it, that the lacerated or divided tissues coalesce and unite by the first intention without any of the usual inflammatory symptoms."

That there is much truth in this observation is apparent from the surprising rapidity with which extensive effusions of blood are absorbed, and laceration of the soft tissues after some dislocations and bruises are healed, when there is no outward wound communicating with the seat of the injury. The great source of danger in compound fractures and dislocations is doubtless in the exposure of the lacerated parts to the action of the atmosphere. The dangerous effects of the admission of the air into the sacs of large abscesses is also well known to every surgeon.

Postscript.—The principle of subcutaneous division may be advantageously applied to other operations, besides that of the section of contracted muscles and tendons in cases of deformity.

In a recent number of the *Gazette Médicale*, we observed that M. Barthelemy, surgeon of the Hospital *Gros Caillou* at Paris, has strongly recommended this method of dividing sinovial tumours. He slides a longish narrow-bladed scalpel under the integuments, and cuts the tumour fairly across in the middle, so that all its contents must be extravasated into the surrounding cellular tissue: the

knife is then withdrawn by the small puncture, and firm compression is made on the part for a few days.

M. Barthelemy mentions three cases in which this mode of treatment has been quite successfully adopted. He suggests also, that perhaps other kinds of tumour may be advantageously treated in the same manner.

M. Malgaigne also has adopted in one case, where there were several ganglions or sinovial swellings over different joints, the method of dividing the tumours fairly across from side to side under the integuments. He suggests its applicability to the treatment of some cases of hydrocele.—*Med. Chirurg. Rev.*, July, 1840, from *Gaz. Méd. de Paris.*

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51. *On Subcutaneous Wounds of the Joints.*—M. Jules Guerin has communicated to the Academy of Medicine, a memoir on this subject, in which he endeavours to show from experiments on man and the lower animals, that subcutaneous wounds of the joints, (*i. e.* those not involving the skin,) as of the tendons, muscles, aponeuroses, cellular tissue, nerves, and minute vessels, may all, by means of particular precautions, be healed by the first intention.

His first experiments were made on animals. He opened successively on two dogs, by the subcutaneous method, the humero-cubital, radio-carpal, femoro-tibial, and tibio-tarsal articulations; and when no air was allowed to come in contact with the opened joint, they healed immediately without exhibiting any traces of inflammatory action. When these articulations were, however, left free in their motions, synovial tumours formed around the joint; but if they were kept in a state of repose, and permanent extension, the cure was completed without any accident whatever. When the wounds were made so as to allow of the contact of air, or its introduction into the joint, inflammation and suppuration were excited, proportioned in extent and intensity to the duration of the contact of the air.

His next experiments were on man. Acting on the results furnished by these experiments, and also on what is every day observed in man, where, in luxation of the shoulder or hip-joints, though considerable injury is inflicted on the capsular ligament and neighbouring parts, no inflammatory symptoms are set up, provided the skin be not torn, he ventured to operate on man. He has many times made a subcutaneous section of the ligaments, and a portion of the fibrous capsule of the knee, and of the foot, to remedy deformities of these joints; and in no instance have these operations been followed by inflammatory action.

The precautions which must be taken in order to insure the subcutaneous wounds of the joints from inflammatory accidents, are, to make the aperture in the skin very small, and as far as possible from the articulation; to make it while the limb is extended, and not when it is bent; and to keep the limb after the operation in the most perfect state of repose. These two last directions are the consequences of a theory which M. Guerin has endeavoured to establish, which is, that articulations are, during their movements, the seat of a partial temporary enlargement, which causes in them a tendency to produce a void; so that if the limb was flexed or extended after the operation, a suction takes place at the orifice of the wound, and air is drawn into the joint.

In the third part of his paper, M. Guerin shows the practical uses of his discovery in the art of surgery. Serous, sanguineous, and purulent collections of matter in the articulations may, by the same means, be drawn off with safety. But it is chiefly to its advantages in aiding the reduction of old luxations, or removing deformities by incising the ligaments or tendons, that M. Guerin directs the attention. He has already by this means cured a congenital luxation of the clavicle which had resisted all known means. He made numerous incisions of the ligamentary apparatus around the head of the bone, and after two operations, so conducted, succeeded in bringing it into its proper place, and curing completely the deformity.—*Edinburg Med. and Surg. Journ.*, October 1840, from *Séances de l'Acad. des Sci.*, May, 1840.

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52. M. Guerin *on Club-Foot, Wry-neck, &c. &c.*—In a lecture which this gen-

tleman recently gave, of the results of his clinical practice, during a period of three months, in the treatment of various sorts of deformity, he thus explains his views as to the primary cause of club-foot, and of congenital irregularities of the joints, as well as of some kinds of deformity affecting the spine.

This cause, in his opinion, is the contraction, acting unequally and irregularly, of the muscles of the part.

"All congenital articular deformities are, like club-foot, the effects of convulsive muscular contraction; and the various sorts of these deformities are the results of the combinations of this contraction differently distributed in the muscles of the trunk and of the limbs."

In confirmation of the truth of this opinion, he alludes to the state of the muscles of the calf in cases of club-foot: they are hard, unyielding, and, as it were, matted together; the tendons are stiff and projecting, and so tense as to resist all attempts to restore the joint to its right position. The muscles chiefly affected in club-foot vary in the different varieties of this deformity. Thus, when the foot is twisted outwardly, the tibiales, anticus and posticus, are the most contracted; when it is turned inwardly, the tibialis posticus, the adductor, and the flexor pollicis are at fault; in cases of valgus with abduction of the foot, the interior and lateral peronei are chiefly affected; and in complex club-foot, the extensors and the flexors of the toes are all more or less unnaturally contracted. In addition to the irregular contraction of certain muscles, there is in some cases, at the same time, a greater or less degree of partial paralysis.

The following table will indicate, in a certain degree, the comparative frequency with which different muscles of the leg are apt to be affected in club-foot:—

In 17 cases,	the tendo Achillis	was	divided.			
12	„	the tendon of the tibialis ant.	was	divided.		
3	„	..	..	..	„ post.	„
1	„	..	..	..	extensor dig.	„
4	„	..	..	..	extens. pollic.	„
1	„	..	..	..	peroneus ant.	„
3	„	..	..	..	flexor digator.	„
3	„	..	..	..	flexor poll.	„
2	„	..	..	..	abductor poll.	„
3	„	..	..	..	flexor brevis dig.	„
5	„	..	..	the aponeurosis plantaris		„
54						

"You thus see, gentlemen, that the tendons of every muscle of the leg, with the exception of the lateral peronei,* have been divided. Conformably to our principles, we have attacked each variety of the deformity, by the section of the tendon or tendons producing it. In no one instance have we failed: you have seen successively disappear the different elements of each deformity by the practice that has been pursued. Where my predecessors were satisfied with restoring the normal *direction* of the foot by the division of the tendo Achillis, we have laboured to effect the complete restoration of its *forms*, the removal of the *curvatures* of the plantar arch, of the forced abduction of the foot, of its curvatures inwards, of the subluxation of the toes, and of the twisted position of the foot—elements, the cause and mechanism of whose production were quite misunderstood, and the proper treatment of which had been quite overlooked."

M. Guerin next alludes to the various auxiliary means, such as manipulations, bandages, plaster of Paris moulds, and machines, used in the treatment of club-foot and other such like deformities.

He admits that each of them is respectively useful in certain cases. By well applied manipulations, after the contracted tendon or tendons have been divided,

* These muscles were divided in a case which occurred subsequently to the delivery of the lecture.

the foot may sometimes be at once restored to its right position almost as speedily as when a dislocation is reduced. When, however, the resistance is much greater, then recourse must be had to bandages, instruments, and plaster moulds. M. Guerin speaks in terms of high praise of the last-named means.

"When the deformity has been very great, and the resistance is so decided as to prevent the adjustment of the limb either with the hand alone, or with the aid of instruments, (after the section of the contracted tendons,) or when the skin is so tender that a sufficient degree of mechanical compression cannot be employed without risk of injury, then the plaster mould, by distributing an equal amount of pressure on every point of the limb, and by retaining and concentrating on its surface the cutaneous exhalation, is by far the best means for overcoming the resistance, and repairing any injury to the integuments which may have been caused by the use of either bandages or instruments. Such circumstances have several times occurred in our practice during the treatment of the extreme and complex sorts of club-foot, in children of from two to four years of age."

The period of time required for the cure of club-foot varies a good deal according to the duration, and the particular form or variety of the deformity that exists. About four weeks may be considered to be about the average time required; but some cases do not require above three weeks, and others need nearly three months before a complete cure is obtained. Whenever the case is of a complicated nature, as when the primary or essential deformity is associated with other deviations from the normal shape and direction of the foot, the treatment required will necessarily be not only more protracted and troublesome, but is seldom so perfect and complete as in simple cases.

Besides the cases of club-foot treated at the Clinique of M. Guerin, there were ten cases of *wry-neck* admitted. His remarks on this deformity are to the following purport:—

"You now know that the two phases—the ancient and the recent—of this deformity are two morbid states, very different from each other, of the muscular system, and which require different methods of treatment. We have already explained to you that permanent *contraction* (contracture) is very different from *retraction*, and we have insisted the more on this distinction, seeing that no surgeon had attended to it before ourselves. The *former* is the spasmodic shortening of a muscle, without any appreciable alteration of its tissue, so that if the contracted muscle were stretched out, all its normal characters would be at once restored. The *latter*, on the contrary, is that shortening produced at first indeed by contraction, but in which the texture of the affected muscle has become subsequently more or less deeply altered, and has thus assumed a greater or less degree of a fibrous or of a fatty consistence.

"Attention to the distinction between these two very different conditions of a contracted muscle is necessary to the establishing of a scientific practice. If there be simple *contraction*, we may hope to effect an elongation of the contracted muscles by means of extension, rubbing, shampooing, &c.; whereas, if there be genuine *retraction*, the only rational method of relieving the deformity consists in dividing the affected muscle.

"We have exemplified this distinction, before your eyes, in the treatment of wry-neck, according as the deformity has been of old or of recent formation; and the success which has attended our practice has abundantly proved the correctness of the diagnosis now pointed out.

"Among the most useful means to promote the elongation of muscular contraction is the use of friction with antimonial ointment: the eruption which this excites has seemed to me to prepare the way for the more successful employment of extension. In three cases of wry-neck treated before you, the re-adjustment of the head has appeared to be intimately connected with the eruption of the pustules over the contracted muscle."

M. Guerin subsequently alludes to the operation of dividing the biceps, semitendinosus, semimembranosus, rectus internus, Sartorius, &c. for relieving the deformities of the knee and hip. He concludes by stating that—

"During the last four months I have performed before your eyes 68 operations of dividing tendons and muscles, in not one of which has any troublesome symptom supervened, and all of which (with upwards of 400 other cases of analogous operations performed by me during the last four years) tend to confirm the truth of my theory of *subcutaneous wounds*, and establish the superior advantages which I have attributed to this method of operating over the usual one."—*Med. Chirurg. Rev.* July, 1840, from *Gaz. Méd. de Paris.*

53. *Treatment of Diseases of the Testicle by Compression.*—Langston Parker, Esq., extols this practice as possessing great advantages over the ordinary methods. "In common swelled testicle compression may be employed," he says, "as soon as the patient is able to bear the application of the plasters; and this is generally much sooner than might be supposed, however acute the disease may be. The great advantages possessed by compression are, almost immediate relief to pain; which is occasioned, in great measure, by the dragging and weight of the inflamed organ, and is mitigated, and most commonly completely removed by its support: the patient can pursue, in most instances, his ordinary duties, and there is no occasion to confine him to bed; a circumstance of great importance where concealment is wished, as it always is, in diseases of this kind. In addition the cure is much more quickly, and much more perfectly effected by compression than under the ordinary method, the swelling of the gland more rapidly subsiding, and less commonly leaving behind it any chronic irritation and enlargement, which is liable at some future time, in bad constitutions, from injury, or from a renewal of the disease, to degenerate into some of the malignant forms of disease of the testis.

"Chronic inflammation and enlargement of the testis also very commonly occurs as one of the symptoms of constitutional syphilis, as well as from other causes. Here, also, compression, as a local remedy, is by far the most valuable of any with which I am acquainted, particularly in those cases where enlargement of the organ, from chronic inflammation, has taken place to a considerable extent, where the weight chiefly incommodes the patient, and little or no tenderness is experienced when the part is handled.

"I am not prepared to say how far compression may be of service in the incipient stages of certain forms of malignant disease of the testis, but believe much advantage may be derived from its employment, since, in addition to the benefit to be looked for from mere compression of the part, much good may be expected from the constant topical application of mercury, iodine, and other remedies, only to be well accomplished in this way.

"Compression of the testis is to be practised by surrounding the organ by straps of plaster, applied as closely and as tight as the patient can bear. The plasters I generally use are those of ammoniacum, with mercury, or iodine and belladonna. These are to be smoothly spread upon thick wash leather, and cut into thin straps; an assistant then grasps the testicle, and draws it as far downwards as he can in the scrotum, which should previously be washed with a little spirits of wine. The first strap should be placed at the upper part, circularly round the testis, and succeeded by others, placed in the same direction, till the whole is covered. A second series of straps is then to be placed in an opposite direction to the former, crossing them at right angles, from behind forwards. One or two long ones may then be placed over these, where they appear to be most needed, to keep the whole in place. The parts should be supported by a well-fitting suspensory bandage, although the plasters at once relieve any inconvenience or pain that may have been occasioned by the dragging or weight of the testicle."—*Lancet*, July 25, 1840.

54. *On the Etiology and Treatment of Congenital Luxations and Pseudo-Luxations of the Femur.* By Dr. J. Guerin.—I have established it as a fact, in my History of Deformities of the Osseous System, that the greater number of congenital articular contractions are the product of primitive muscular retraction. . . . . I conclude: 1. That congenital luxations of the hip-joint are, like

club-foot, torticollis, and spinal deviations, the product of primitive muscular retraction, and that the kind of luxation depends upon the direction in which the retraction happens. 2. There exists an order of deformities of the hip-joint not hitherto indicated, and to whom I apply the term of *pseudo-luxations*, because they look like luxations, although the head of the bone remains in the cotyloid cavity. These vary as do the complete luxations, and from the same causes. 3. The essential treatment consists in division of the retracted muscles. I have thrice performed this operation with success. The congenital luxations and pseudo-luxations of joints depend in the majority of cases on primitive muscular contraction, which takes place in three different modes: by shortening, by paralysis, and by stoppage of development of the retracted muscles; and the different varieties of these deformities are, like those of the neck, the spine, and the foot, the effect of this retraction differently distributed in the muscles of these parts. In a girl aged fourteen years, I divided the biceps, semi-tendinous, semi-membranous, and rectus internus, for two complete luxations of the knee, produced by primitive retraction of these muscles; on each side there was subluxation of the tibia backwards upon the condyles of the femur, rotation of the limb outwards through the space of about one-fourth of a circle, and an inclination outwards of the leg upon the thigh of about sixty degrees. The rotation outwards, the lateral inclination and the gliding backwards of the tibiæ, were reduced on the day following the operation to the simple normal flexion of the leg upon the thigh, and since that period there remained nothing more than a certain degree of permanent flexion of the joint. In order to convince those who feel any doubt respecting the safety with which these operations may be performed, I may add that, on the same day, I successfully divided in the young female above mentioned thirteen muscles or tendons beneath the skin, for the relief of certain deformities from which she suffered; on the following day, she felt no kind of pain nor indisposition, nor were there any symptoms of inflammation in any one of the divided parts.—*Brit. and For. Med. Rev.* Oct. 1840, from *Gaz. Méd. de Paris*, Jan. 25, 1840.

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55. *Puncture of Brachial Artery—compression—cure.* By JOHN BARRETT.—A patient "was bled for some affection of the chest, and the brachial artery unfortunately wounded: the hæmorrhage was profuse. A compress was immediately applied to the wound, and the arm bandaged from the hand to the shoulder. The limb was kept in a state of rest for a fortnight; no bad symptoms occurred, and, at the end of this time, the bandage and compress were removed. Pulsation was found in the artery at the point of puncture, but there was no aneurism, and no further treatment was necessary.

"The patient died at the end of five weeks after the accident, from the chest affection, for which he had been bled, thus giving an opportunity not often met with of examining the state of the parts. There was a slight effusion of serum about the neighbourhood of the puncture; a cicatrix in the posterior wall of the vein; condensation of the cellular structure between the artery and the vein, giving it a thickened sensation to the fingers when squeezed between them; an orifice in the anterior wall of the artery about a line in diameter, filled with a plug of lymph apparently becoming organized, and which looked like a small coagulum: the edges of the orifice were everted, as if they had been driven out by the stream of blood rushing from the artery: both the artery and vein were as pervious as in the natural state.

"It would seem, from this case, that the process by which a punctured artery is healed is not always by the formation of a coagulum *external* to the artery, and the effusion of coagulating lymph between the edges of the wounds; for though, no doubt, extravasation did take place in this case into the cellular substance, causing the thickening perceptible between the artery and vein, still this only acted immediately by allowing the formation of a plug in the arterial wound. This plug had not the appearance of coagulating lymph effused between the edges of the wound, for they were everted, but was evidently a coagulum formed by the stream of blood which had caused the eversion.

"In disease of the heart I have seen coagula adhering to the internal serous coat, and becoming organized, and so, no doubt, might this plug, and thus would the obliteration of the puncture have been effected if the patient had lived long enough.

"This case also shows that an operation is by no means always necessary when this accident occurs. Two other cases have come to my knowledge where the compress and bandage were successful; but the use of the bandage is necessary, rest being enjoined. The mere employment of compression at or above the wound can only be justifiable as a temporary expedient, and then it exposes the patient to great suffering, and, if persisted in with any view of cure, may lead to a fatal result. This happened in a case of puncture of the artery from bleeding, the limb becoming frightfully œdematous, and such a state of exhaustion taking place as not to allow of an operation.

"In a case which came under my own care, of a scythe-wound of the posterior tibial artery, the cure had been attempted by compression at and above the wound. The wound was sloughy, and the patient so exhausted by the repeated attacks of hæmorrhage, that a few days more must have terminated his life. I tied the artery at and above the wound, and eventually the case did well.

"If, then, compression be tried—and it really appears to me that, in wounds of the brachial artery from bleeding, we are bound to try it before resorting to an operation—the bandaging of the limb seems essential as diminishing the arterial, and, if properly used, as assisting the venous circulation, and thus preventing œdema."—*Lond. Med. Gaz.* May, 1840.

OPHTHALMOLOGY.

56. *On the Operation for Strabismus.* By Professor Dieffenbach.—Since my first communication on this operation it has had such a general reception and has acquired such an importance as I did not at that time anticipate. Upwards of 300 cases have been operated on by me within a few months, and both in Berlin and in other places my proceeding has been frequently imitated. I propose to give here a short general view of the results of my observations.

The youngest individuals in whom I have undertaken the division of the shortened muscle of the eye were five years old; the oldest were upwards of forty.

Sometimes one, sometimes both eyes squinted, and the operation had generally the same favorable result in both cases. When both eyes were affected I either operated first on that which squinted most, and when that was quite well on the other, or else on both at the same time.

Squinting inwards, from shortening of the rectus internus, was by far most frequent. Sometimes the trochlearis muscle was also shortened, so that it was necessary to divide it as well as the rectus. In the whole number of those I operated on there were only a few who squinted outwards, and still fewer in whom the eye was directed upwards or upwards and inwards. I found no eyes at all that squinted downwards.

Strabismus upwards was sometimes complicated with blepharoptosis. The division of the rectus superior not only cured the squinting, but the ptosis gradually diminished after it.

Strabismus outwards or inwards was often complicated with nystagmus bulbi. After the division of the external or internal rectus not only did the squinting cease but in general the nystagmus also. In other cases, however, the latter was persistent, and did not decrease till after the division of the rectus superior, or obliquus superior, or rectus externus.

When cataract and strabismus coexisted, the operations for both were done at the same time, and the result was in every case favorable to both.

In most of the patients the strabismus had commenced in very early childhood after ophthalmia neonatorum, scrofulous inflammation of the eyes with

ulcers on the cornea, or after acute exanthemata, &c. In many there were cicatrices on the cornea or cataracta centralis. In cases of the former kind, in which hitherto artificial pupils would have been made, the operation was attended by success and considerable improvement of the sight.

All those who had strabismus of only one eye saw more weakly with it than with the other; in those who squinted with both eyes that which was turned least was usually the stronger. The weakness of the one eye had been observed by only a few of the patients; they had naturally looked only with the better eye and the other had been unemployed. The operation completely cured the weakness of sight; some who had actually amaurotic amblyopia could see clearly directly after it was performed.

Some of the patients previous to the operation often saw double; this defect continued for some time after it and then gradually ceased. Some others who had never seen double before did so immediately after the operation. These had been in the habit of looking only with their strong eye while the other had been unused. The improved position of the latter compelled it to see, but the double vision was subsequently lost.

Some who were operated on did not see so well immediately after as before the operation; but after some exercise this weakness of vision ceased and they could then see quite clearly. The cause of this was that when the eye was put in its normal position a point of the retina which was before unexercised was now brought into play and required some practice before it could fully discharge its function.

Operation.—That for strabismus convergens is here taken as the type. The operator always stands on the right side of the patient whether he be operating on the right or on the left eye. The patient sits on a stool, and an assistant standing behind him draws up the upper eyelid with a Pellier's hook. A second assistant draws down the lower eyelid with a double hook which is set in a handle and of which the teeth are connected by a transverse piece. He kneels down before the patient so as not to be in the way.

The operator then puts a fine hook into the conjunctiva at the inner angle of the eye just where it is passing from the palpebræ to the bulb, passes it superficially through it, and gives it to a third assistant who stands on the left side of the patient. The operator next passes a second hook in the same way through the conjunctiva about a line and a half from the first. He and his assistant then both at the same time draw their hooks a little up, so as to raise a fold of the conjunctiva, and at the same time pull the bulb somewhat outwards. The fold is then divided with a pair of curved eye-scissors; and this cut usually at once exposes the tendon and the anterior part of the muscle. A couple of cuts with the scissors then expose the outer surface of the muscle; a rather blunt hook is passed under its tendon, and the two sharp hooks that held the conjunctiva are now removed; the eye is held completely in the power of the blunt hook, and is to be drawn by it from out the internal angle of the orbit. A flat probe is then pushed under the muscle; and the loose connection by cellular tissue between it and the eye is broken up. The division of the muscle is made by the scissors already mentioned, either, first, through the tendon in front of the hook; or, second, behind the hook at the beginning of the muscular substance; or, third, some lines deeper back.

When the tendon is divided nothing of it remains on the eye, and the muscle commonly retracts a line backwards. When the muscle itself is divided at its anterior part or further back, its posterior portion retracts, and the anterior, which remains connected with the bulb, turns forwards like a loose flap, which according to circumstances, may be removed by the scissors or pushed back into the wound if it is thought desirable that it should unite again with the posterior portion.

In practised hands the whole operation seldom lasts more than a minute; and it is done almost without pain. When finished the eye is cleaned with cold water and a soft sponge. The after-treatment consists of cold lotions, and very great abstinence from food and strong drinks. The patient should be kept in

a darkened room. In most cases the wound heals very quickly, and after a few weeks no traces of the operation remain, and the eye stands in its normal position.

The operation for internal strabismus is by far the most easy; the division of the obliquus superior for squinting upwards and inwards is more difficult; that of the rectus externus for strabismus divergens is more difficult still; and the most difficult of all is the division of the rectus superior for squinting upwards. With respect to the manipulations of these operations they are just the same as those for strabismus convergens.

Remarks on the Operation.—The fixing of the upper and lower eyelids with the elevator and the hook so as to expose the whole of the anterior surface of the globe is indispensable, for neither the will of the patient nor the separation of the lids by the finger can do this effectually.

The fixing of the globe can be accomplished only by fine hooks carried superficially through the conjunctiva; the seizing and elevation of the fold of conjunctiva by forceps sounds more gentle than to do it with a sharp hook, but it is in reality far more painful, more injurious, and more insecure; the fold raised up by the forceps easily tears or slips from their grasp, and if the forceps are made with hooks they wound as well as pinch the membrane. Two hooks must be employed to make the fold tense enough.

The great number of operations that I have performed has given me opportunity of observing the phenomena that ensue subsequently to them, and their after consequences. The question here is only of internal strabismus, but any surgeon will easily supply the necessary modifications for the operations in the other varieties. In the first case the eye after the division of the muscle goes into its normal position. In the second it remains in some degree squinting. In the third it turns outwards.

In my first operations the position of the eye after the division of the muscle was left to chance, but I gradually succeeded in getting it into my own power to determine it. If there be the slightest degree of convergent strabismus, only a very small opening should be made in the conjunctiva, and the tendon only divided close to the eye without separating the muscle from the globe. In this case the eye at first almost maintains its previous position, but after some weeks it becomes straight. If the conjunctiva be more extensively divided, and if the under surface of the muscle be separated from the globe with a probe and then cut across, the squinting is at once nearly or completely removed. If the conjunctiva be divided over a greater arc and towards the back of the globe, if the cellular tissue be extensively separated and the muscle be detached far back and divided at its middle, then the eye, even in cases in which the whole cornea was before hidden in the internal angle, stands quite straight after the operation.

Hundreds of those whom I have cured have been seen by our own and by foreign medical men, and it was often impossible to distinguish the eye that had squinted from the other.

In some who still squinted slightly after the operation the position of the eye was made perfectly normal by tying up the sound eye and rolling the globe forcibly outwards so as to stretch the newly-formed uniting substance. In others of those whom I first operated on, in whom I had not adopted this after measure, I repeated the operation; and I found that in fourteen days after its first division the muscle was again intimately united with the globe, and that with the exception of a slight thickening and induration of this part there was no indication of a previous operation.

Immediately after the operation the eye can be moved inwards by the superior oblique, and at a later period by the divided muscle which has again united with the globe. In several persons in whom the muscle was divided deeper in the orbit the eye turned outwards some weeks after the operation, so that there was actually an external strabismus. If the divergence was but slight it was often sufficient to snip (*betupfen*) the conjunctiva at the inner angle, so as by the shortening of the membrane that was thus produced, to bring the eye into the middle. But if the divergence was greater I then divided the external rec-

tus and the eye became straight again, especially when I at the same time removed a fold of conjunctiva from the internal angle, for the cicatrix that then followed tended to draw the globe inwards. If the eye, notwithstanding the division of the external rectus, still remained turned outwards, I then, after dividing and separating that muscle, tied a thread as fine as a hair upon its tendon, and with this pulled the eye forcibly inwards. The end of the thread was then drawn tightly across the bridge of the nose and fastened to a piece of good adhesive plaster, which was stuck upon the opposite side. The result for the most part surpassed my expectations.—*British and Foreign Med. Rev.*, October, 1840, from *Casper's Wochenschrift*, July 4, 1840.

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57. *On the Cure of Strabismus.*—Dr. A. von Ammon, in a memoir on this subject in the *Monatsschrift für Medicin*, &c., June, 1840, very justly remarks, that a principal point is the determination of the indications for the operation; and I think it the more important, because the whole history of the affection, notwithstanding the works of many excellent physiologists, is extremely obscure and uncertain. Nor could this be otherwise when the anormal position of the eye is in different cases so varied, and so often the consequence of diseased conditions of the brain, the abdominal nervous system, and of the globe itself. Here is a wide range for the production of the disease independently of the cases which are produced by diseases of the orbit. No rational physician will expect to cure such a strabismus by myotomy; and the operation can be applicable only when the malposition of the eye is primarily dependent on the muscle, *i. e.*, when there is a shortening of one of the muscles of the eye, which holds the eye to one side and limits its motions towards the other; but even here more than one condition must be laid down.

But unfortunately the necessary basis of the operation, pathological investigation, is at present absolutely and entirely deficient, no one has yet clearly convinced himself on the dead body that a shortened state of the muscle exists in squinting. The operation, however, may itself be made the means of investigating the nature of the disease; and here again, as has been the case with club-foot and wry-neck, surgery may be made the assistant of pathology.

With regard to the true orthopædics of the eye, *i. e.*, its acquiring the right position after the operation, this consists in the constant endeavour and active exertion of the patient, to give his eye the proper direction. A club-foot or a wry-neck would just as soon return to its right position after division of the tendons without assistance as a squinting eye will. A good method of insuring success is to tie up the sound eye; the eye that has been operated on then always moves to the centre of the orbit, and the longer it is kept there the more likely it is to remain. In few cases will this or some similar measure be unnecessary.

Dr. A. also suggests the propriety of endeavouring to make a subcutaneous or rather a subconjunctival division of the muscle, which he believes would avoid all the inconveniences to which the present method is subject. He has performed it on the dead subject and on animals; and has no doubt it may be applied to actual cases of strabismus.—*British and Foreign Med. Rev.*, October, 1840.

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58. *The Causes and Treatment of Strabismus.—Summary of 76 Operations by Mr. Liston.* By W. R. Ancram.—The causes of contraction of the muscles of the orbit appear in several instances to be similar to those which produce shortening of other muscles of the body, and induce deformity in the extremities, as in club-foot, contraction of the ham-string muscles, &c., being dependent on direct or indirect injury or irritation of the nervous system. Under this head may be placed twenty-one of the cases which have been operated on; three being produced by direct injury to the brain, thirteen by the convulsions to which children are liable in early life, and nine by the irritation of the diseases of early childhood, small-pox, measles, and scarlatina. Habit is another rather frequent cause; the eye has been affected by some disease; in the anxiety to avoid the

light it has been turned inwards, and permanent strabismus has been the consequence; or a shade has been worn over the eye, the light has been admitted only at the inner angle, and to this point the eye has been constantly directed: ten patients date their deformity from this occurrence. Only four persons have presented themselves who suffered, from their attempts to imitate their squinting companions, by permanent strabismus. Violent exertion, as in hooping-cough, occasioned the disease in five patients; and the action of the muscles of the eye, in looking suddenly at some object, caused a permanent contraction in seven others. Four cases were occasioned by falls. The relative proportion of congenital strabismus is small. I have found only eight who say they were born with the deformity, and in four cases I think that was rather doubtful. From my inquiries into the causes of strabismus, I should say that a far greater number of cases was occasioned by spasmodic contraction of the internal rectus, than by paralysis of the external straight muscle. In a few cases I omitted to inquire the cause of the deformity.

The contraction of the recti muscles varies in different individuals, from the slightest cast, with perfect power of motion, to almost complete immobility and partial concealment of the cornea in the inner angle of the eye. The cornea is most generally drawn simply inwards; in some cases downwards as well as inwards, more rarely upwards and inwards; of course, by the combined action of two muscles. Two patients have also presented themselves where the eye was drawn directly outwards, evidently by a contraction of the external rectus. Both those individuals have been prevented by circumstances from submitting to the division of the abductor as yet; but it is proposed to perform the operation in the course of a few weeks. In a third case the external rectus has been divided, with the same success that attends the more common operation: it presented no greater difficulties than the division of the internal muscle. A most general effect of these changes is diminished power of sight, and this diminution increases in the ratio of the withdrawal and fixation of the cornea from the axis of vision.

The causes which produce strabismus being usually the diseases of early childhood, that is the age at which the affection most commonly comes on. In the greater number of cases the disease has begun previously to the third year, and after that time the liability to the affection appears to decrease with the age. After puberty it is exceedingly rare. Of the fifty-three cases I have examined, one only occurred at the age of fifteen, and one at twenty-five; in the latter case, the strabismus was occasioned by direct injury to the head. As far as I can judge, both sexes are equally liable to this deformity; forty females and thirty-six males having submitted to the operation. The disease does not appear to attack one eye in preference to the other, nearly an equal number of right and left eyes having been operated upon. One case has been treated where both eyes were affected. Age is no bar to the performance or success of the operation. Patients of all ages, from four to sixty-two, have been treated for this affection. A contracted internal rectus, of sixty years' standing, is the most confirmed case in which I have seen this operation performed, it succeeded perfectly. In very young children it would hardly be advisable to attempt the operation when the strabismus was only of few months' duration. The displacement of the eye might depend on some disease of the brain or intestinal canal, which, by attention to the general health, might be removed, and the squint cured without resort to the more violent remedy of division of the muscle.

With respect to the operation, the safest way to secure its complete performance, is to dissect, perfectly clean, the internal part of the ball of the eye, for the slightest fibre of the internal muscle that remains undivided will prevent eventual success. In some instances, after the internal rectus has been cut across, the patient possesses the power of turning the eye a little inwards and downwards; this arises from contraction of the inner border of the inferior rectus. Mr. Liston is in the habit of partially or completely dividing this muscle in all these cases, and this has been done in about ten instances. The only and best criterion of the completion of the operation, is the total inability of the patient

to move the cornea towards the inner canthus from the centre of the orbit. If this exist, there is little fear of any return of the distortion of the eye; and to effect this purpose, it will sometimes be absolutely necessary to divide the inner border of the inferior rectus. In four instances the operation has not been perfectly successful; these were all early cases, where, after the division of the internal muscle, the patient still possessed the power of moving the eye somewhat inwards, and before experience had shown the necessity of the division of the depressor. Three of these cases have submitted to a second operation; in all, the inferior rectus has been divided, and the cure is perfect. The fourth, a boy of thirteen years old, is fearful to submit to a second attempt; the eye is drawn downwards as well as inwards, caused, most probably, by contraction of the inferior rectus.

To insure the effect of the operation, the scissors and forceps certainly appear the most effectual instruments; and either for the clear dissection of the inner side of the eyeball, or for division of part of the inferior muscle, they are much to be preferred. By using these, the operator will avoid the danger of doing too little or too much; he will, on the one hand, make certain of cutting all the tendinous fibres which bind the eye in its unnatural position, and he will run no chance of wounding the sclerotic coat, and evacuating the humours of the eye, and thus effectually destroying vision. Ineffectual attempts to divide the internal rectus are common-enough occurrences; and cases have presented themselves where it has been necessary to resort to a second operation. The accident of destroying the organ has also happened, and is not unlikely to occur in the hands of those who go rashly and unskilfully to work.

Although such severe injury is done to the coverings of the eye, it is a rare circumstance to see any inflammation follow the operation. Only five cases have presented any such occurrence; and in all it was so slight, that the application of a few leeches to the inner angle of the eye soon relieved all the unfavourable symptoms.

A slight ecchymosis occurs under the conjunctiva, and may continue for some weeks, even after that membrane is entirely healed. In two or three cases a small abscess under the conjunctiva has formed, always of very little importance; it has discharged itself in a few days, and produced no inconvenience. A little caruncle, or large-sized granulation, sometimes springs from the conjunctiva, near the inner canthus; this may be snipped off if of large size, or its growth subdued by the application of sulphate of copper.

The restoration of the perfection of vision is one of the greatest recommendations of this beautiful little operation, and this effect has been most striking in several instances. In one very complete contraction of the internal rectus, the eye seemed to have been perfectly disused, and incapable of estimating the distance of objects. This patient, when he shut the perfect eye, presented many of the phenomena of a person restored to sight by the operation for congenital cataract; and it was most interesting to remark the daily improvement in his sight. As the two eyes begin to correspond, both in acuteness of vision as well as uniform motion, some diplopia is occasionally complained of.

The first operations which were performed by Mr. Liston, took place in the early part of May. I have had an opportunity of examining lately some of these cases, and I find that the eyes remain perfectly straight; there appears no reason, therefore, to expect that the other cases will not succeed; and this enables me to say, that out of seventy-four cases one only has been unsuccessful, and this in the person of the young boy above alluded to.—*Lancet*, July 18, 1840.

MIDWIFERY.

59. *On the oblique contraction of the Pelvis.*—Dr. Nagele has lately called attention to a particular form of contraction of the pelvis which he says has never before been pointed out, and which, nevertheless, is of frequent occurrence; it

is the oblique contraction, consisting of "a complete anchylosis of one of the sacro-iliac symphyses, with imperfect development of one half of the sacrum, contraction of the anterior sacral foramina of that side, and diminished width of the os coccygis and ischiatic notch" In consequence of this disposition, the pelvis is narrowed obliquely, that is to say, in the direction of the diameter crossing that which extends from the points of anchylosis to the acetabulum of the opposite side, while the latter diameter on the contrary is not lessened, and, when the deformity is considerable, even offers more space than in the normal state.

Dr. Nagelé first met with this faulty conformation in 1803. Two women, the subjects of these observations, had only been delivered after much trouble: in one the forceps had been applied with very great difficulty, in the other perforation of the cranium had to be resorted to; both sunk under the effects of their confinements. The author saw then only the anatomical preparations; but, in 1828, he fell in with a woman who presented a remarkable example of it. She was a young girl, large and apparently well formed. The callipers gave seven full inches antero-posteriorly; the sacro-vertebral angle could not be reached with one or even two fingers. Her labour lasted three days before the head had descended sufficiently to warrant the application of the forceps. The termination of the accouchement, by means of this instrument, presented unexpected difficulties, and required so much exertion that they afterwards regretted not having practised perforation of the cranium. Five days after, the woman died of puerperal fever. At the autopsy was found the deformity described by Dr. Nagelé as oblique contraction.

His attention being roused by these facts, M. Nagelé caused researches to be made in the anatomical museums, and learned with surprise that this defect of conformation, which had until then passed unperceived, was quite frequent, for in the course of years a pretty large number of similar pelves have been encountered.—*Journ. de Méd. et de Chir. Prat.* May, 1840.

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60. *On Convulsions during Pregnancy and Delivery.*—The following general conclusions close a very able memoir on the above subject from the pen of one of the most experienced accoucheurs in Paris, M. Capuron.

1. Convulsions occur much more frequently during a delivery at the full period than during a miscarriage—doubtless, from the greater severity of the pains and the consequent greater disturbance of the circulatory and nervous systems. Indeed it is truly astonishing that such protracted suffering as almost always accompanies a first labour does not in every instance induce some convulsive attack.

2. The majority of the women, who are seized with convulsions during pregnancy or labour, are of a sanguineous and plethoric constitution, and usually of an irritable and highly nervous temperament.

3. The attack is often preceded by some precursory symptoms, such as headache, confusion, noises in the ear, twitches of the tendons of the fingers or toes, or of the muscles of the face, and a tendency to bewilderment and forgetfulness. The patient is usually much depressed in her spirits, and very apprehensive of the result of her labour.

Perhaps, however, generally the convulsions come on unexpectedly and without any premonitions.

4. The convulsions, after lasting for a longer or shorter period of time, usually terminate in deep somnolence, during which the respiration is heavy and more or less stertorous, and the pulse is full and large, such as is commonly felt in sanguineous apoplexy: occasionally a partial tetanic contraction of the jaws continues for a considerable time after the abatement of the general spasms.

5. From what I have observed, I am inclined to be of opinion that an attack of convulsions during a premature labour is on the whole more dangerous than a similar attack if the labour should be at the full period of gestation.

We might expect that this should be the case, when we consider that the

cervix uteri is generally harder, less pliant, and more resisting, if labour happens to come on in the seventh or eighth month of pregnancy.

6. According to the results of my experience, local and general bloodletting and the use of warm relaxing baths are the most powerful means both to prevent and to arrest the attacks of puerperal convulsions. The blood-letting relieves the congested vessels of the head, and probably also the sanguineous accumulation in the uterus, and the warm bath takes off the spasmodic state of this organ and of every other part of the body, by inducing a derivative action towards the surface. As auxiliary means of occasional utility, the extract of belladonna rubbed on the cervix uteri, and some of the milder preparations of opium given externally, may be mentioned with praise.*

7. If we should find on examination that the cervix uteri forms a rigid band around the head or neck of the child, and that the labour-pains make little or no impression upon it, even after blood-letting and other relaxing means have been used, we should not hesitate to divide the constricting portion at one or two places of its circumference with a bistoury. In all such cases, it becomes the accoucheur to ascertain the state of the urinary bladder; as it has been found, in more than one instance, that over distension of this viscus has powerfully predisposed to, if it has not actually caused, the occurrence of convulsions during accouchement.

If the head of the child be within reach of the forceps, we should never hesitate at once to finish the labour by extraction. But if this be impracticable, and the convulsions still continue, recourse must be had without delay to the use of the perforator and crotchet.—*Med. Chirurg. Rev.* July, 1840, from *L'Experience.*

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61. *Remarkable Cases of Placentitis;* by M. Ghersi.—*Case* 1. *Gangrene of the Placenta.*—F. M., ætat. 26, slender, of a sanguine temperament, was subject to gastro-enteric irritations which at times deranged the functions of the uterus. At the age of 24 she married; two months after she had metrorrhagia which lasted two days, together with pain in the kidneys, succeeded by an expulsion of a fœtus of forty days. The following year she again becomes pregnant, and continues well until the fourth month, (Feb. 25, 1839,) when she was taken with pains in the loins and subpubic region, and soon after with metrorrhagia. Six days elapsed without any remedies being employed except the application of a plaster to the loins, at the recommendation of a midwife. The symptoms becoming aggravated, Dr. Manco was called, and found the following state of things: Dull pain in the head, rather dry tongue, thirst, general lassitude; full and vibrating pulse, dull pain in the pubic region; metrorrhagia of variable intensity at different hours of the day. Bleeding from the arm, rigid diet, acidulous drinks, and absolute rest, were prescribed. The flooding and other symptoms were removed in four days.

Ten days later, (March 17,) the lumbar and pubic pains reappeared and continued for ten days, then increased and caused a renewal of the hæmorrhage. At this juncture M. Ghersi was called in. He took a little blood from the arm, but the flooding considerably increased; blood streamed from the womb just in proportion as it was allowed to flow from the arm. The vein of the latter was closed, and the uterine hæmorrhage abated; but it reappeared at intervals until the evening of the 28th of March.

Then the lumbar and pubic pains grew stronger and stronger, and the flooding still more abundant; compresses wet with cold vinegar and water and laid over the hypogastric region; but, much to the astonishment of the physician, they

* M. Capuron omits to mention two of the most powerful remedies in the subjugation of puerperal convulsions—viz. the tartrate of antimony and full doses of camphor. The former may be given in doses of half or of a whole grain, combined with a drachm of syrup of poppies, every quarter of an hour, (after venesection,) until the spasm relaxes. From five to ten grains of camphor with fifteen to twenty drops of tincture of henbane, administered every half hour or so, constitute also a most potent remedy.—*Rev.*

appeared to increase the hæmorrhage. Warm drinks were substituted for cold ones. The movements of the fœtus were perceptible to the mother and to the hands of the assistants; auscultation, moreover, demonstrated the beating of the heart. The hæmorrhage is presumed to have arisen from a disease of the placenta. Pills of alum, opium, and catechu were prescribed for several days, but without advantage.

March 31, hæmorrhage becomes more copious; dizziness, ringing in the ears, troubled sight, small and frequent pulse, anxious respiration. These phenomena were attributed to charcoal vapour from a lighted furnace in the patient's chamber. This is remedied; the hæmorrhage continued; abortion appeared imminent. A sinapism was applied between the shoulders; the sanguineous flow ceased for eighteen hours. On examination of the cloths which had received the blood, four or five gangrenous fragments of placenta were recognised among the clots. The flooding reappeared.

April 8, in the evening, the hypogastric and lumbar pains returned, the motions of the fœtus became very frequent, the amniotic liquids were discharged. Canella water was prescribed; pain abated; blister to hypogastrium; syncopy. The tampon was applied. The hæmorrhage sometimes abated and then increased; the patient was very feeble.

April 22. Abortion was accomplished without many pains; the fœtus was still-born, very pale and slender. The placenta not coming away, traction was made upon the cord, but uselessly; it was drawn once more and broke; mother very weak. All was left to nature until the evening of the 24th. Patient is so agitated that no attempt could be made to extract the placenta. In the mean time the uterus had contracted and expelled the placenta, a portion of which was in fragments, with some gangrenous clots of blood.

One-half of the placenta appeared healthy; a portion of the other was entirely destroyed, and this had been expelled by fragments; the remainder was of a dark ash colour, without any appearance of cotyledons, very fetid, pultaceous, and falling into shreds on the slightest traction.

Dr. Ghersi thinks that the gangrene of the placenta might have been prevented if, at the second appearance of the hæmorrhage, ergot had been given.

Case 2. *Placentitis.*—A woman, ætat. 30, robust, mother of three children, pregnant the fourth time, had gone favourably to the fifth month of her pregnancy, when she was attacked with pains in the loins and pubic region, followed by loss of blood. By bleeding the hæmorrhage was arrested for ten days; but it reappeared at the end of this time, again to disappear under the influence of the same means. The same phenomena were reproduced several times at intervals of ten or fifteen days. The woman meanwhile reached the end of her term, and was delivered of a living child who died the fifteenth day.

The placenta offered unequivocal marks of past phlogosis; its posterior face was covered with plastic lymph; this matter amalgamated together and confounded the cotyledons in a third of its breadth.

Case 3. *Placentitis.*—A pregnant woman, ætat. 23, entered the hospital, August 29th, 1839, to be treated for a confirmed syphilis; she complained at the same time of pains in the lumbar and hypogastric regions, and of fever of the intermittent type. Dr. G. diagnosticated a latent suppurating placentitis, and probably an approaching abortion, which took place the 10th of October, in the seventh month of pregnancy. The child was slender, and of a decrepid appearance; it died some days after birth.

When examined the placenta was manifestly ulcerated in two points of its periphery, for the length of an inch and a half and the breadth of an inch. In the centre the placental mass was converted into a lardaceous tissue for the extent of an inch and a half. Several points of suppuration existed at the same time.

"According to these facts, I would have thought with Simpson," says the author, "that the symptoms proper to placentitis are lumbar, pubic, and hypogastric pains, if the two following observations had not come to weaken this belief."

Case 4. *Placental Gangrene; Necropsy.*—A young lady, noble, of very feeble constitution, had had a very painful pregnancy, and a difficult labour. She became pregnant a second time. Towards the seventh month she was threatened with metrorrhagia after a short walk; this show often reappeared, and was accompanied with lumbar pains. The flooding ceased promptly under the influence of a small bleeding from the arm. Towards the eighth month the patient was unexpectedly awakened by an intense but fugitive pain followed by discharge of the liquor amnii. Nothing further occurred until the ninth month, when a hæmorrhage declared itself, which lasted eight days. The lady's life was in great danger; discharge of a very fetid liquid from the vagina; this canal full of clots of blood. Death from excessive hæmorrhage.

At the autopsy, the os uteri was found to be much dilated; the fœtus discoloured, exsanguinous; presentation of the right shoulder; the amniotic membranes ruptured. The placenta excessively fetid; morbidly adherent to the uterus; its substance very thin, or some two-thirds thinner than ordinary; its colour dark as that of wine lees; its resistance so feeble that it tears to pieces at the least traction. In many places, its substance is altogether pultaceous.

Case 5. *Adherence of Placenta to Child's Head.*—In the following case the placentitis went on in an entirely latent manner. A woman, ætat. 39, of lymphatic temperament, mother of seven children, pregnant for the eighth time, experienced after some light pains in the kidneys, and towards the third month, a rupture of the membranes. Two hours afterwards uterine pains and a flow of blood from the vagina manifested themselves; an hour and a half later she was delivered of a fœtus enveloped in its membranes. At the examination the placenta was found to adhere so forcibly to the head of the child that it was impossible to separate them without tearing it. It is incontestible, says, the author, that this adherence to the teguments of the cranium was the consequence of a phlogosis, and that this phlogosis was itself the cause of the abortion. A pretty copious metrorrhagia, which lasted forty days, followed the abortion.

It remains proved, therefore, according to him, that placentitis can sometimes exist latently until the epoch of abortion. In some cases it provokes a sort of diminutive fever of the intermittent type; this is when points of suppuration arise in the substance of the placenta. In general, however, it is always true to say that lumbar and hypogastric pains, and intercurrent floodings, form its principal characters.—*Lancette Française*, July 21, 1840, from *Annali Universali di Medicine*, May and June, 1840.

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62. *Fracture of the Arm of a Child during birth, by the natural efforts of Parturition.* By Dr. Löwenhardt.—The mother in this case was twenty-two years old, and it was her first labour. In consequence of slight malformation of the pelvis it was necessary to assist the delivery by the forceps; by their aid and by the moderately powerful and regular contractions of the uterus, the head had passed through the vulva (the face being turned towards the left side of the mother) when a longer than usual pause between the pains occurred. Presently, however, they returned with considerable force, and the right shoulder, which had before been passing slowly along the perineum, was rapidly expelled; and scarcely had the left shoulder, which was directed upwards and to the right, passed through, when a snap was heard. When the trunk was completely expelled, it was found that the left arm, which lay across the chest, was fractured at the upper third of the humerus. It was put up with paste-splints and a bandage, and union took place.

The author remarks that the case is interesting, in showing that fractures of the upper extremities of new-born children are by no means always produced by awkward manipulation, but under certain circumstances are the effect of the natural process of parturition. That fractures and indentations of the skull may be produced by a projecting promontory, as well as by narrowness of the pelvis, is well known, and the author himself has met with two cases of the kind; but that fractures of the upper extremities may be affected by the act of parturition has not yet, as far as his knowledge extends, been pointed out. In this case the

fracture seems to have been produced by the humerus being fixed between two hard bodies, the receding os pubis and the ribs, while the shoulder was being rapidly expelled; and, consequently, a fracture of the lower extremity must be much less likely to occur, because, except in a monstrosity, the leg can never be thus impacted between two hard bodies.—*Brit. and For. Med. Rev.* Oct. 1840, from *Medicin. Zeit.* Mai 6, 1840.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

63. *Insanity in Extenuation of Crime.*—Edward Oxford, a youth of eighteen or nineteen years of age, on the 10th of June, 1840, discharged two pistols in rapid succession at the Queen of England, while riding. He was tried for the crime of high treason, and the result was a verdict of "*guilty, being at the time insane.*" The following are the material facts elicited on the trial.

The prisoner was born at Birmingham; came very young to London; went to school at Lambeth, and served successively as barman in three public houses in London. He then went into lodgings. On the 4th of May, he purchased a pair of pistols and a powder flask. He practised at a shooting gallery in Leicester square; at a second in the Strand, and at a third at the west end of the town. On the third of June, he called on a school companion at Lambeth, of whom he bought half a hundred copper caps, and asked where he could buy bullets and three pennies' worth of gunpowder. This friend directed him where he could purchase bullets, and gave him some gunpowder. On the 9th of June, he showed a loaded pistol, refusing to say what he meant to do with it, but added that he had been practising at a target.

When arrested, he instantly declared that he was the person who had fired. He gave his address, and at his lodgings were found a powder flask, three ounces of powder, a bullet mould, five leaden bullets, and some percussion caps. Some papers of an apparently treasonable nature were also discovered.

For the defence, it was proved that the prisoner's grandfather had been decidedly insane, so much so, as to require a straight waistcoat. The prisoner's mother, also, testified to the insanity of her husband. "Frequently before our marriage, he made attempts on his own life. On one occasion, he was brought in from the street with a razor in his hand. She described her husband's conduct to her as absolutely brutal, cutting her arm with a jug, her head with a pewter pot, and stabbing her with a file; and she added, he used to laugh with satisfaction when he saw her displeased." Another witness had seen the father ride into his own parlor on his horse; and it was also proved that he had attempted to commit suicide with laudanum.

The testimony in favour of the insanity of the prisoner was as follows. His mother stated that "Edward was also eccentric. He pointed a pistol at me the first time he brought pistols to the house. He was particularly fond of fire arms and gunpowder. He used to amuse himself with cannon when a boy. He was once very much burnt by gunpowder. This was eight years ago. His eyebrows were burnt off, and I sat up two nights with him. He screamed terribly all the time. He has a habit of laughing, and I have frequently beat him for it. He laughed hysterically after fits of violent passion. The laugh is involuntary, I have no doubt."

George Sanden had the prisoner under his care for twelve months, and sent him home because he thought that he was out of his senses. The aunt, with whom he lived as barman, and several other persons, spoke to his inconsiderate and continual laughing. His sister also deposed that he had presented pistols at her.

Dr. Hodgdin, Dr. Conolly and Dr. Choune, considered the state of the prisoner's mind as manifestly unsound.

Lord Chief Justice Denman, in summing up, made the following remarks: "It was sought to be proved that there was a hereditary taint of insanity in his

family, and that his conduct was odd; that he was at the age at which hereditary insanity developes itself; that the crime itself, and the papers found in the box, were proofs of insanity. With regard to the hereditary insanity, there was no proof of the nature of the insanity under which the grandfather laboured; and it would also be for them to say, whether there was any evidence to show that the grandfather, although a man of very violent temper, was suffering at all from insanity. With regard to the medical evidence, he considered it a most dangerous doctrine to assume the commission of crime as evidence of insanity, and to make every atrocious and extraordinary wickedness its own excuse. Strictly speaking, there never could be any adequate motive to crime, and it would be most dangerous to assume that every person committing a crime without adequate motive was insane, and therefore not accountable for his actions. The object here was to show, that at the time of committing the act he was not able to distinguish right from wrong. The papers might be used on either side. If he really believed that he was a member of a secret society which had no existence, there was a degree of delusion which might almost excuse a person labouring under it from the consequences of any act. But there was a degree of cunning exhibited in the letters, and it was impossible to say under what circumstances they were written. If he committed the crime for the sake of notoriety, he must be held responsible for the consequence of his action. He left the case to the jury."

On their finding, the prisoner was committed to Bethlehem Hospital, one of the public asylums for the insane.

The above narrative is taken from an account of the trial in the London Atlas newspaper, of the 11th of July, 1840. The editor, in expressing his acquiescence with the verdict, observes: "We are only anxious, for the sake of public security, that it should not go forth to the world that a man is emancipated from the laws against murder because his grandfather and his father were violent and disorderly people, who ill-used their wives; and because he himself had an eccentric habit of laughing." T. R. B.

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64. *Feigned Disease, by Provocation.*—Mr. Villard, a French writer on diseases of the eye, states that he knows a man, unworthy of the name of a physician, who has made an enormous fortune by producing artificially specks of the cornea in young persons liable to be drawn into the military service.—*British & Foreign Medical Review*, No. 19. T. R. B.

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65. *Period of Gestation in Cows.*—Earl Spencer has made this the subject of observation for a number of years, and, in 1839, communicated to the English Agricultural Society, the result. Out of 764 cases, 314 calved before the 284th day, and 310 after the 285th. At 284 days, 66 calved, and at 285, 74 calved. Lord Spencer, therefore, supposes that the probable period of gestation should be considered 284 or 285 days, and not 270, as is stated in some works of authority on Husbandry. The following is a condensed view of his tables.

At 220 days,	1	At 286 days,	60
226	1	287	52
233 to 239 days,	4	288	42
242 to 250	7	289	45
252 to 259	12	290	23
262 to 270	13	291	31
271 to 278	69	292	16
279	32	293	10
280	35	294 to 299	24
281	39	304 to 305	2
282	47	306 to 307	4
283	54	313	1
284	66		
285	74		764

It thus appears "that the shortest period of gestation, when a live calf was produced, was 220 days, and the longest 313 days; but I have not been able (he observes) to rear any calf produced at an earlier period than 242 days. Any calf produced at an earlier period than 260 days must be considered decidedly premature, and any period of gestation exceeding 300 days must also be considered irregular; but in the latter case the health of the produce is not affected."

"There is a prevalent belief among farming men, and I believe farmers, that when the time of gestation of a cow is longer than usual, the produce is generally a male calf. I confess that I did not believe this to be the case, but this table shows that there is some foundatian for the opinion. In order fairly to try this, the cows which calved before the 260th day, and those which calved after the 300th, ought to be omitted as being anomalous cases, as well as the cases in which twins were produced, and it will then appear that, from the cows whose period of gestation did not exceed 286 days, the number of cow calves produced was 233, and the number of bull calves 234; while from those whose period exceeded 286 days, the number of cow calves was only 90, while the number of bull calves was 152."

The twins were as follows:

Twin cow calves,	- -	7
Twin bull calves,	- -	5
Twin cow and bull calves,	-	11
		23

Total product,		
Breeding heifers,	- - -	354
Bull calves,	- - - -	422
Heifers, twin with bulls, (Freemartins,)		11
		787

Journal of the English Agricultural Society, 1839, vol. i, part 2, p. 165.

T. R. B.

66. *Quick with Child.*—Most of my readers are doubtless familiar with the distinction taken in our own law (and which is derived from the English) as to a female being merely *pregnant*, or being *quick with child*. The punishment for attempting or procuring abortion is more severe in the latter case than in the former. The objection of medical jurists to this discrimination is also understood.

In civil cases, it would appear, from the following decision, that this distinction is not to be entertained.

A testator bequeathed the residue of his personal estate to such of his grandchildren *as should be living at his decease*, in equal portions. The testator died June 19, 1809, and Charles L. Hancock, one of his grandchildren, was born March 6, 1810. The court decided that "the distinction between a woman being *pregnant* and being *quick with child*, is applicable mainly, if not exclusively, to criminal cases, and does not apply to cases of descents, devises, and other gifts. In general, a child is to be considered as in *being* from the time of its conception, where it will be for the benefit of such child so to be considered. The time of conception of a child is presumed to be at a period nine months previous to its birth; and where there is no evidence to rebut the presumption, it is conclusive." Charles was therefore declared to be entitled to a share of the property.—*Hall* v. *Hancock*, 15 *Pickering's* (*Massachusetts*) *Reports*, p. 225.

In a recent case, I find a new definition of the term introduced, which is certainly not in accordance with the language of English and Scotch commentators. The defendant (a female) was found guilty of murder. She urged in stay of execution, that she was pregnant. A jury of matrons was empannelled, and they came into court and asked the assistance of a surgeon. The judge (Baron Gurney) granted it; and on his previous examination of the surgeon, he said,

"*Quick with child*" is having conceived; "*With quick child*" is when the child has quickened. "Do you understand the distinction?" The surgeon replied that he did, and was then sent to the jury, who shortly after brought in a verdict that the prisoner was not quick with child. *Regina* v. *Wycherley, Carrington & Payne's Reports*, vol. viii, p. 262. T. R. B.

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67. *Alleged Rape. Feigned Diseases.*—I am indebted to the kindness of Dr. D. B. Bullen, of Cork, for the narrative of the following case. He was pleased to transmit a copy of it, published in the *Dublin Medical Press*, of March 25, 1840, through my brother, Dr. John B. Beck, of New York.

At the Cork Spring Assizes of 1838, two brothers, of the name of Callaghan, were tried before Sergeant Greene upon a charge of having violated and otherwise abused a woman of the name of Sarah Fleming. The accused were respectable persons.

The prosecutrix testified that she was married, had a child in the house of industry and two others (girls) elsewhere. She had been acting in the capacity of nurse-tender in the North Infirmary, from which place she was returning on the evening previous to the morning of the alleged outrage, when she was accosted on the North Bridge by a man, who told her, among other things, that her sister was coming from Clonmel, and was taken ill on the road, and that he was looking for her. Hearing this, the witness accompanied the man to several places, and he entered a house, from which returning, he said, "She is not there." They walked together until they arrived at Mallow Lane, when the clock having struck twelve, she became alarmed, and said she wished to be at her lodgings. She however remained with him, as it appears, a half an hour, and during all this time his language, as she stated, was proper. A woman now came up, and said, "Is that you, Bill?" to which the man replied, "This is my sister," adding, "this woman (witness) wants to sleep with you;" and she said, "Yes, and welcome." After some further conversation, the clock struck one, when another man came up, and they whispered together. They soon made off, and arriving at a lane near Dominick street, the first man pushed her in, upon which two other men came up, one of them disguised with a cap, which nearly covered his face. She thought of the Callaghans at this time, one of them being lame. Becoming alarmed, she clung round the first man, when Patrick Callaghan knocked her down. Here the prosecutrix described the outrage, which she said was participated in by all three. She swore also, that not only had the prisoners committed the offence charged, but that they had subsequently treated her in a manner the most brutal. They then tied her up to the wall, leaving her exposed; and that in that state she was found in the morning; that she had lost her senses, which did not return to her until she found herself in the infirmary.

The principal facts elicited on her cross-examination were, that she admitted having acted improperly with three different men. The present was the third time she had appeared against the Callaghans in a court of justice; the first time was when she prosecuted Patrick for an assault upon her daughter, a child eleven years old, when he was convicted and sentenced to six months confinement. She had been offered money as an inducement not to prosecute, but she refused it. The next prosecution was for an assault on herself at Mallow lane, when they were acquitted. During the assault she neither screamed nor bawled. She could not do either, as they fastened a rope around her neck, and stuffed her mouth with hay.

Nicholas Duggan deposed, that on the morning in question, between four and five o'clock, on proceeding from his own house, he saw the prosecutrix in the position described in her own evidence; that he met a woman lower down in the lane, whom he begged for God's sake to relieve the prosecutrix from the state in which she was. When released, she whispered the woman to send for Sergeant Robinson.

Constable Robinson described the condition of the prisoner. He had her removed to the infirmary, and took her statement. He then proceeded to arrest

the Callaghans, at seven o'clock, but did not obtain admission into their house for half an hour. Patrick appeared pale and frightened. He took them into custody, and gave them in charge to the police. One of the brothers said, "I suppose this is Sarah Fleming again."

The medical testimony is thus given by Dr. Bullen. When this woman was brought to the North Infirmary, on the 22d of September, she continued for sometime in a state of apparent insensibility. Her mouth was stuffed with a quantity of dry grass, and a piece of cord was firmly tied across it in the manner of a gag. On her chest were slight contusions, and the wrists were firmly bound together with pieces of thick whip-cord. On removing her clothes, the neck of a common black bottle fell from between her thighs upon the floor. When questioned after some time, as to the cause of being found in this situation, she told pretty nearly the same story as detailed at the trial, with some particulars which did not appear in her evidence. She said that after each of the three Callaghans had violated her, they forced either a stick or some other hard substance, and afterwards the neck of a common black bottle into the vagina; that they stuffed her mouth with grass and gagged her; that they bound her wrists together, and having tied her clothes above her head, suspended her by the cords from the railing of the window, where the watchman found her. Dr. Howe, under whose care she was placed, made a strict examination of her person a few hours after being brought into the hospital. There was no mark of bruises upon her thighs, nor any appearance of violence about the pudenda. Considerable indentations had been left about the wrists where the strings had been tied, and when a hand was applied to the contusions on her chest, she screamed and appeared to suffer great pain. She expectorated bloody saliva in quantity, and with consummate art developed the several symptoms which may be expected to follow the injuries she pretended to have received.

Dr. Howe distrusted her story from the commencement, but the consistent and collected manner in which she told it, and the extraordinary faculty with which she simulated the appearances of disease, made a strong impression in her favour on the minds of many. It was resolved to seem to place implicit reliance on the truth of every thing she said, and to treat her with the greatest commiseration.

About ten days after her admission into the hospital, a little before the hour of visit, a stream of water was seen flowing from under her bed; on being asked what was the matter, she said "she had lost all power over the bladder, having felt it tore when the Callaghans forced the bottle into her body." Dr. Howe immediately passed a catheter into the urethra, and making an examination, per vaginam, found the parts in a natural and healthy state. Two days after this occurrence, she began again to expectorate bloody saliva, spitting upon the floor so as to attract attention, and complained of severe pain in the chest, the consequence, she said, of the injuries she received on the night of the assault. Her mouth being examined, it was evident that her gums had been scratched, and that the bloody saliva had been produced by sucking them.

She was now taxed with deceit, and accused of having invented a false and horrible tale, with intent to swear away the lives of three innocent men. She listened with an air of calm resignation, and replied with gentleness, "God forgive you, gentlemen; wait a while, and you shall see how you wrong me." That night when it became dark she found her way into the Lock Ward of the infirmary, from which she was turned out by the nurse tender. The evening after, Dr. Bullen (who is a surgeon of the infirmary) paid a late visit to the hospital, and missing Sarah Fleming from her bed, he searched for her, and found her again in the Lock Ward; being asked what she wanted there, she appeared much confused and made an equivocating answer. In a week after, having been reproached as an impostor, and subsequent to her nocturnal visits to the Lock Ward, she requested Dr. Howe to examine her, as she felt some soreness about the vulva. He did so, and found venereal chancres, apparently in the first state of formation. Hearing the character of these sores pronounced, the woman triumphantly exclaimed, "See, gentlemen, how you wronged an

innocent woman; as God may judge me, I got this disorder from the Callaghans the night they assailed me." Information of this circumstance was immediately conveyed to the prisoners, who had been confined in prison since the 22d, and they were examined by the late Dr. Evans, who gave a certificate that neither of the three brothers presented the slightest trace of the venereal disease.

As the testimony of Dr. Howe, and the certificates of Drs. Evans and Hevenden, both since dead, showed that no indication of violence to justify the charge of it had been discovered, the prisoners were acquitted. Sarah Fleming was committed to the city jail, upon an indictment for perjury.

In May, immediately following these March assizes, Dr. Bullen took the medical charge of the prisoners in the city jail, for his friend, Dr. Nugent, who had gone to London. He found Sarah Fleming, in the infirmary of the prison, confined to bed, in consequence, as she asserted, of the injuries she had received on the night when assaulted by the Callaghans. When she was informed that she was to be placed under his care, she broke out into the most violent invective and abuse, and said, "that as he had helped to ruin her character in the North Infirmary, he was now come to persecute her to death in the prison." After some days, she appeared really ill, and he succeeded with some difficulty in calming her indignation. She seemed to be suffering under some very severe abdominal disease. There was great swelling and tenderness of the whole belly, but more especially above the pubis. The stomach was extremely irritable, immediately rejecting every thing she swallowed. Her pulse 130, and very small; tongue foul and parched; skin hot and dry. Dr. Bullen asked to see her alvine evacuations, which fortunately had been kept, and found them perfectly natural. On seeing him smile, she said quickly, "You may smile, but look at my urine." The urine was abundant, but heavily loaded with ropy mucus, and deeply tinged with blood. In the bottom of the chamber-pot was a very curious looking sediment, which he found to consist of powdered mortar and ashes. He inquired if she was menstruating, and found she was not; but the nurse-tender told him that there was a discharge from the vagina of an extremely offensive character, and her linen was marked with a muco-purulent discharge. The appearance of the urine was both perplexing and suspicious. On the one hand, the ropy mucus and blood mixed with it, and the tenderness on pressure; and, on the other, the powdered mortar and ashes. Dr. Bullen directed her bed to be placed in the centre of a large room, removed from the walls and fire place. He ordered her to be closely watched, and all her discharges to be carefully removed and put aside for examination. The next day, she was alarmingly ill; the tension and pain of the abdomen had much increased. She could not bear the slightest pressure over the pubis, and the discharge from the vagina was much increased and very offensive. In spite of the most determined resistance on her part, he made an examination per vaginam, and found it completely blocked up with a large solid body, which, with much difficulty, he extracted, and found to be a *large rough paving stone!* The miserable woman turned to him and exclaimed, "God forgive you; that is the stone the Callaghans forced into my body, and the doctors at the infirmary could not make it out."

Mr. Dillon, Demonstrator at the Royal College of Surgeons, Dublin, had accompanied Dr. Bullen, that day, to see the prisoner, and assisted him in removing the stone, which weighed seven ounces. It must have been lodged for some time in the vagina, as it was thickly coated with a white calcareous incrustation and layers of thickened mucus.

For more than a week her life was in imminent danger. High inflammation of the uterus and coats of the bladder, involving the peritoneum, took place, accompanied by deep ulceration and sloughing of the mucous membrane of the vagina; and for some days, the case had every appearance of terminating in recto-vaginal fistula.

The infirmary of this prison opened into a garden, to which the sick prisoners had access, and in this garden were heaps of stones similar to those taken from the prisoner. For the three months during which Sarah Fleming remained un-

der Dr. Bullen's care, she continued perseveringly to simulate various diseases with great perseverance and remarkable fidelity of execution; all evidently with the design to multiply proofs of the injuries received from the Callaghans.

At the ensuing August Assizes, she was tried for perjury, convicted and sentenced to transportation. "Mr. Murphy, governor of the city jail, informed me afterwards, that from the moment of conviction, the demeanour of this woman became completely changed, and that the report of her conduct on the passage to New South Wales was extremely favourable."

Remarkable as is this case for the malignant perseverance of the accuser, and improbable as the occurrence of a similar attempt may seem, yet it should not be forgotten that the lives of the Callaghans might have been forfeited, *had not an immediate examination* been made by Dr. Howe. Not only in Ireland, but I think, in some parts of this country, accusations of rape are increasing. They are very readily preferred, and they depend for proof on the testimony of the accuser alone. Should it not be required that an early examination be made in these cases by a medical practitioner, and in default of a speedy application for that purpose, that the charge be proportionably discredited? T. R. B.

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68. *Treatment of Poisoning with Opium, &c.*—In ordinary cases the indications are, first, to endeavour to remove the poison from the stomach. This is attempted by the use of emetics or of the stomach pump. The second is to keep the patient constantly roused. In numerous instances this has been accomplished by dashing cold water over the head and body. Dr. Boisragon advises a modification of this, and adduces several cases of his success. His directions are as follows: after using the preliminary means, place the feet in warm water, and pass a sponge dipped in the same and as hot as the hand can bear it, over the shoulders, chest and back. Let this be immediately followed by a dash of cold water over the face, or by passing a sponge dipped in it over the head and chest. These continued novel or *alternate* impressions on the nervous system may prove, in his opinion, powerful assistants in the recovery of poisoned persons.—*London Medical Gazette*, March 6, 1840. T. R. B.

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69. *Action of Albumen on Corrosive Sublimate.*—The change induced by albumen on corrosive sublimate when taken internally, is one of the most interesting problems in chemistry. It is universally considered as an antidote if taken sufficiently early, but how it acts seems at present to be a matter in doubt. I believe Dr. Bostock was one of the first who noticed the action of these bodies on each other, and he states explicitly, that even when heat was applied, the precipitate is a compound of albumen and corrosive sublimate. (*Nicholson's Journal*, vol. xiv, p. 142.) Dr. John Davy, to whom I am indebted for this reference, advocates a similar opinion in his Physiological and Anatomical Researches. According to his experiments, no muriatic acid was disengaged or produced, nor could he induce a union of albumen with either the protoxide or peroxide of mercury. It has, however, been generally credited on the authority of Orfila, that a decomposition takes place, and that the resulting compound consists of albumen, muriatic acid and calomel. He grants, however, in the third edition of his Legons, (vol. i, p. 301,) that the resulting calomel is never applied in the form of powder to the membranes of the alimentary canal, nor has it the physical properties of calomel, since it is intimately combined with the substance which has been the cause of its formation, and thus constitutes a ternary chemical compound. I have also mentioned, in another place, the cases of Olivier and Barruel, who, in persons poisoned with corrosive sublimate and to whom milk and albumen had been administered as antidotes, could detect no calomel; but the tests indicated the presence of corrosive sublimate, a portion of which was probably still undecomposed.

Dr. Turner (Chemistry, 5th edit., p. 937,) also states, that Rose, in a late analysis, proved the resulting precipitate to consist of oxide of mercury and albumen.

The latest experimenter is Lassaigne. He asserts, from a series of observa-

tions, that in the action of albumen on metallic salts, *this principle unites directly with these compounds without producing any decomposition.* It forms compounds with them, which are insoluble in water, when these bodies are in certain proportions, but susceptible of solution when the albumen or the metallic salt is in excess. And these compounds he denominates *albuminates.* (*American Journal of Pharmacy*, vol. xii, p. 170, from the *Journal de Chimie Médicale.*)

We have reason to fear, from these results, that the value of albumen as a *chemical* antidote, will be somewhat impaired. Still its use should not by any means be omitted, but it should be administered as early as possible and in large quantities. T. R. B.

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70. *On the Conversion of Calomel into Corrosive Sublimate.* By M. Miahle.—A physician had prescribed to a child a few powders, containing in each five grains of the muriate of ammonia, five grains of sugar, and half a grain of calomel. After taking a few of these the child died, with all the symptoms of poisoning by corrosive sublimate; and the apothecary was charged with the death of the child, on the supposition that he had substituted corrosive sublimate for the calomel. Experiments were instituted to ascertain whether the calomel could have been decomposed by the ammoniacal salt; and it was satisfactorily proved by M. Peten-Koffer, that a porton at least was converted into corrosive sublimate. A celebrated French professor of chemistry, however, denied that such an action took place; and M. Miahle repeated with great care the experiments, and arrived at the following important conclusions.

1. The proto-chloride of mercury (calomel,) when mixed with muriate of ammonia, or the chlorides of sodium or potassium, and distilled water, is partly converted into the deuto-chloride of mercury (corrosive sublimate,) and partly into metallic mercury. This decomposition takes place at the temperature of the human body, and even at ordinary temperatures, in the course of a few instants. In order to be convinced of the truth of this, it is only necessary to have in the mouth for a few minutes a small quantity of calomel; a pretty intense mercurial taste is soon developed, due to the mutual reaction of the mercurial chloride, and the alkaline chlorides contained in the saliva.

2. It is to the conversion of calomel into corrosive sublimate and metallic mercury, when acted upon by the hydrochloric acid or hydrochlorates, or ammoniacal salts which exist in the digestive tube, that we must attribute the pathological phenomena of mercurial salivation, when calomel has been administered internally. What proves that such is really the case, is the fact, that when calomel does not purge, but is tolerated by the digestive organs, it excites an abnormal secretion of saliva and this on account of the larger quantity of sublimate which is formed.

3. As the quantity of sublimate formed within the body depends on the quantity of alkaline chlorides met with in the intestinal canal, those who habitually use large quantities of salt, all other things being equal, ought to be more easily salivated than others.

4. The antisyphilitic properties of calomel are probably due entirely to the corrosive sublimate and metallic mercury into which it is converted. Without doubt its anthelmintic virtues are owing to the same cause; the two substances into which it is converted acting as a poison on the intestinal worms.

5. What has been said of calomel is equally applicable to the proto-ioduret of mercury; it being, in the same circumstances, converted into the deuto-ioduret. —*Edinburg Med. and Surg. Journ.* July, 1840, from *Journal de Pharmacie*, February, 1840. T. R. B.

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71. *Case of Poisoning by Colchicum Seeds.* By Dr. Neubrandt.—A man, 52 years of age, took by mistake, on the evening of the 18th February, a decoction of the seeds of colchicum, made with a table spoonful of the seeds to a pound and a-half of water. During the night he vomited, and passed more than fifteen stools. He was seen hy Dr. Neubrandt next morning, but was not then complaining much. The vomiting and purging were less frequent, and though he

felt weak, he had no pain, and could sit up. The abdomen, though not distended, contracted spasmodically when touched; the pulse was small and rather quick; the stools had a very fetid colour, and contained a quantity of whitish looking membranes. He was first ordered tepid water and melted butter, but this excited the vomiting and purging of new. Strong infusion of coffee, and also infusion of marsh mallows with lemon juice were next prescribed.

Next morning, the 20th, he presented the following symptoms; his face was pale, the eyes sunk in the orbits, and the pupils very much dilated, the respiration was hurried, and he groaned much. The tongue was covered with a whitish fur, and was with great difficulty protruded. The region of the stomach was painful. His breath, face, and extremities, were cold; the pulse very quick, and scarcely to be felt. The purging was more constant, and the stools contained matters of a clear blue colour in considerable quantity. Although he gave distinct answers to questions which were put to him, his intellectual faculties seemed to be confused. He died at ten o'clock. The only symptoms of any portion of the poison having been absorbed were the continuance of the vomiting and purging.

The body was examined twenty-three hours after death. The pupils of the eyes were very much dilated, the eyes were much sunk, and the mouth spasmodically closed. There was remarkable rigidity of all the members and muscles. The abdomen, scarcely more swollen than during life, was of extraordinary rigidity, and was covered with peculiar looking spots, which were especially numerous in the region of the stomach, and on the sides of the abdomen; these spots were of a violet and greenish blue colour, presented the appearance of rays, and were not circumscribed. The muscles were of a deep blue colour, as if they had been dried in the air. The trachea was inflamed at its bifurcation. The lungs were collapsed, pale, and soft to the touch, but not diseased. The heart was turgid with coagulated blood, and covered with spots of black, violet, and brown colour. The œsophagus was of a natural appearance till towards the cardia. The stomach was of a light violet colour, its cardiac orifice being of a deep violet. The veins of both stomach and intestines were much distended by very dark blood. The liver had a violet hue over its concave surface; and the gall bladder was much distended with green bile. A few red and brown mottlings were observed on the surface of the intestines, but otherwise they presented nothing unnatural. The other organs of the body appeared to be healthy. —*Ibid.*, from *Medicinisches Correspondenz-blatt*, 1840. T. R. B.

72. *Rupture of the Spleen.*—Dr. Sotis relates, in *Il Filiatre Sebezio*, for February, 1840, four cases of this accident. The first case occurred in a woman who received a kick in the left hypochondrium and immediately expired. The spleen was found, on examination, separated into two parts as if cut with a sharp instrument, and there was a large effusion of blood in the abdominal cavity.

The second case resulted from a blow with a stone on the left hypochondrium, which was followed by almost instantaneous death. All the organs were found healthy except the spleen, which was largely ruptured, and the abdominal cavity contained a quantity of blood.

The third case occurred in a boy 18 years of age, who fell from a height of about 20 feet. He remained senseless, and died in a few hours. On autopsy, the spleen was found divided transversely into two parts; a great quantity of blood was effused in the abdomen. All the other organs were healthy.

The fourth case was that of a boy 15 years of age, who received in a quarrel a blow from a large stone, thrown from a distance, on his left hypochondrium. He instantly fell senseless and never revived. The spleen was found split through the longitudinal fossa, and each of these portions had two deep transverse fissures, so that the spleen had the appearance of having been cut into six portions at its concave surface. There was also much sanguineous effusion into the abdominal cavity.

In all the cases, death, hæmorrhage, and the size of the divided vessels, suf-

fice to explain the rapidity with which it occurred. However, Dr. Sotis attributes in part the gravity of this injury to the lesion of splenic plexus an important division of the solar plexus. Whence, independently of the debility instantaneously resulting from the hæmorrhage, there was a destruction of nervous power, the effect of which is still more profound and instantaneous.—*Gaz. Méd. de Paris*, May 9, 1840.

MEDICAL STATISTICS.

73. *Results of Amputations.*—Dr. Lawrie, in a paper communicated to Med. Sect. B. A. for advancement of Science, gave tables exhibiting the results of 276 amputations, which took place in the infirmary of Glasgow, during several years. The cases were classed from the sex, the limb operated on, and from the causes rendering the amputation necessary, whether from disease previously existing or from accident. Some of those results were as follows: of the 276 cases, 216 were males, of whom 86 died: 60 were females, of whom 14 died; 153 were for previous disease, of whom 35 died. In operations at the shoulder the deaths were equal to the recoveries; of the arm, the deaths to recoveries were as 3 : 14; in the leg, as 1 : 2; in the wrist, at one period, as 1 : 29; in another period as 8 : 22.

The question of primary or secondary amputation in cases of wounds was discussed, and the preference given the secondary. Immediate dressing was approved of. The impropriety of operating during the shock was insisted on. The cause of death was examined, and found frequently to exist in the viscera, particularly in the lungs.—*Athenæum.*

74. *On the Comparative Frequency of Hernia according to the Sex and Age, and also relative to the Population.*—In an interesting article on this subject, in the "*Annales d'Hygiene Publique*," July, 1840, M. J. F. Malgaigne, after enumerating the difficulties attending an inquiry of this kind, compares the results which have been published with regard to the comparative frequency of hernia, with those which have come under his own observation.

1. *Comparative frequency of hernia in the two sexes.* According to Louis at Saltpetrie, an hospital for women, 3 out of every 100 were affected with hernia; whilst at Bicetre, a hospital for men, 6 of every 100 had hernia; and at the Hospital des Invalides, the proportion was a fraction greater. This gave a proportion of 2 men for every 1 woman afflicted with that disease. At Amsterdam, Jean Monnikoff found the proportion of men greater, being nearly 3 males to 1 female with hernia. M. Mathey says, that, at Antwerp, the proportion is as 4 men to 1 woman, and Mr. Lawrence that, at London, the proportion is so great as 6 to 1.

M. Malgaigne, in order to arrive at something like an approach to the truth, collected carefully the number of the cases, both male and female, who applied for bandages or pessaries during the years 1836 and 1837, and also part of 1835, at the Bureau Central des Hopitaux. He found that during October and November, 1835, 435 cases of hernia, or prolapsus of the vagina, had occurred; and that of this number 335 were males, and 100 females; giving a proportion of $3\frac{1}{3}$ males to 1 female. But if those who applied for prolapsus of the vagina alone be cut off, 410 cases of true hernia still remained—of which number 335 were males, and 75 females; or $4\frac{1}{2}$ males to 1 female.

For the year 1836 the proportional number of those afflicted with hernia were 2203 males, and 594 females, or very nearly 4 males to 1 female. This does not include the cases of prolapsus of the vagina or uterus.

For the year 1837 the proportion was very nearly the same, viz. 4 males to 1 female, the numbers being 1884 males and 489 females. From these facts he draws the conclusion, that in Paris, amongst the lower classes, four males are afflicted with hernia for every female so situated.

2. *The influence of age on the occurrence of hernia.* The results will be most easily understood by consulting the following table drawn up by M. Malgaigne.

Ages.	1836. Males.	Females.	Total.	1837. Males.	Females.	Total.
From birth to 1 year	48	7	55	30	8	38
1 to 2 years	16	7	23	29	7	36
2 years .	18	4	22	14	2	18
3 years .	11	4	15	9	1	10
4 years .	9	0	9	9	4	13
5 to 13 .	53	12	65	45	6	51
13 to 20 .	83	8	91	76	7	83
20 to 28 .	118	17	135	108	23	131
28 to 30 .	47	9	56	33	12	45
30 to 35 .	119	26	145	112	28	130
35 to 40 .	237	53	290	181	47	228
40 to 50 .	410	131	541	312	111	423
50 to 60 .	457	118	575	385	98	483
60 to 70 .	367	119	486	324	100	424
70 to 75 .	133	31	164	132	18	150
75 to 80 .	62	13	75	65	15	80
80 and upwards	15	5	20	20	2	22

From this it appears that hernia, which is pretty common in the stage of infancy, becomes gradually rarer as life advances till it attains its minimum about the eighth or ninth year; and after this period of life gradually becomes more and more frequent till the close of life. In fact, the susceptibility to the disease seems to increase with the advance of years.

3. *Of the comparative frequency of hernia in men from 20 to 21 years of age.*—M. Malgaigne has chosen this age for the illustration of the comparative frequency of hernia among the male sex, as it is the only one which permits of sufficiently accurate data being obtained. The French laws regarding the recruiting of the army necessitates the taking of an accurate census of the male sex of this age every year, and as hernia is a cause of exemption from service, the relative numbers of those afflicted with it are pretty accurately ascertained. From 1801 to 1810, the number of recruits examined at Paris was 25,503, of which number 694 were rejected on account of hernia, or about 1 in every 36 men. In the environs of Paris, of 5100 recruits 140 were rejected on account of hernia, or about 1 in 36. From 1816 to 1823, of 9836 recruits examined at Paris, 261 were exempted on account of hernia, or about 1 in 37 men; and in the environs, of 1894 recruits 53 were exempted, or about 1 in 35. If, from this number of recruits be abstracted all those who have been rejected on account of deformity or deficiency of height, and who were consequently not examined with regard to the presence or absence of hernia, the proportion falls to about 1 in 31 or 1 in 32. The accurate tables published by order of government of the recruits from 1831 to 1836 inclusive, show the same result, viz. 1 rejected for hernia out of every 31 men.

4. *The comparative frequency of hernia to the total population* is only given on calculation, having no very fixed data to go on, except the ascertained points of the comparative frequency of hernia in the male sex at 21, and the proportions at the different ages as given in the table quoted above, and the relative frequency of the complaint in the male and female sex. With these ascertained facts, M. Malgaigne calculates that no fewer than one-twentieth of the total population are afflicted with hernia.

5. *The relative frequency of hernia to the total population at different ages*, as ascertained by calculation, is given in the following table:—

From birth to one year the proportion of hernia in males	is as 1 to 20.67
1 to 2 years,	1 to 29.09

2 to 3	—	1 to 36.87
3 to 4	—	1 to 55.64
4 to 5	—	1 to 59.72
5 to 13	—	1 to 77.31
13 to 20	—	1 to 41.72
20 to 28	—	1 to 30 74
28 to 30	—	1 to 20.23
30 to 35	—	1 to 16.58
35 to 40	—	1 to 8.41
40 to 50	—	1 to 8.37
50 to 60	—	1 to 5.54
60 to 70	—	1 to 4.37
70 to 75	—	1 to 3.27
75 to 80	—	1 to 3.74

6. *The proportion of hernia amongst the rich and poor.*—Paris being divided in twelve arrondissemens or wards, the proportional number of conscripts rejected on account of hernia from each of these furnishes a prety accurate statement as to the comparative frequency of the disease amongst the wealthy, the middling, and the indigent classes of the population. Thus from 1816 to 1823, in those chiefly inhabited by the indigent classes, 1 was rejected, on account of hernia, out of every 28 men, at 21 years of age. In the wards inhabited by the middling classes, 1 was rejected out of every 38 men; and in those inhabited by the rich, 1 out of every 37 men.

7. *Relative frequency of hernia in the different departments of France.*—It would be impossible to give, in a short space, any thing like an intelligible statement of the results of M. Malgaigne's researches on this subject. It may be stated, in general terms, that hernia was found to be more rare among the mountainous or hilly districts than in those of the plain, and less frequent in towns than in the country; and less also amongst the pure French race than amongst those where the races are crossed with people of other countries. A coloured chart of the departments accompanies the descriptions of this part of the subject, the different depths of colour over which exhibit the relative frequency of hernia in each. [Some further interesting researches relative to the statistics of hernia will be found in our No. for November, 1838, p. 248.]—*Edinburg Med and Surg. Journ.* October, 1840.

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75. *Medical Students in the Dutch Universities.*—The following table is copied from an official report made to the States General, January 24th, 1840, on the condition of the Universities in Holland.

Number of Students, Decembeer 31, 1838.

	Leyden.		Utrecht.		Groningen.		Total
	Natives.	Foreigners.	Natives.	Foreigners.	Natives	Foreigners.	
Divinity.	127	49	130	2	67		375
Law.	204	65	96	5	49		419
Medicine.	150	28	74	9	55		324
Sciences.	10		51		39		100
Letters.	27	14	141	2	48		232
	526	156	492	18	258		
Total.	682		510		258		1450
Total in 1837.	713		533		277		1503

Nederlandsche Staats Courant, February 26, 1840. T. R. B.

AMERICAN INTELLIGENCE.

Successful Operation for Strangulated Hernia under peculiar circumstances—sloughing of the cœcum. By PAUL F. EVE, M. D., Professor of Surgery in Med. Col. of Georgia.

In the last No. of this Journal, I had occasion to present its readers an interesting case of strangulated hernia, complicated by the presence of the testicle in the abdominal canal, which had never descended into the scrotum. Since then, another case of no less interest to the profession has occurred in my practice, the remarkable recovery of which I think claims particular attention.

On the 3d instant, I was requested by Dr. Cunningham, the oldest and one of the most respectable physicians of Augusta, to visit a patient then labouring under strangulated inguinal hernia. The previous history of the case was as follows: Jim, belonging to John Phinizy, Esq., of this city, had been long afflicted with double inguinal and scrotal hernia. He was an excellent cook, but his infirmity had caused him to select an easier occupation for the past few years. The family physician, Dr. C., had applied a double truss, and as he then thought after having returned the intestines on both sides. With a magnanimity truly noble, and an honesty worthy of imitation, particularly in younger and less experienced physicians, this practitioner of medicine for more than thirty years, candidly acknowledged after the operation that he was mistaken, for the hernia could not have been reduced as he believed.

On Sunday, 1st November, while making a sudden effort, the intestine of the right side escaped under the truss, and soon became strangulated. Having failed to relieve the patient by the ordinary means, (and he says that he had often been in the same state before for one or two days at a time,) Dr. C. requested a consultation. I found Jim, at 11 A. M., much troubled with hiccup, and the usual symptoms of strangulation, and failing to return the protruded part, which was about the size of a large orange, I proposed the tobacco injection. As soon as the specific effect was produced, taxis was again resorted to, but with no better success, and Lisfranc's advice of fifteen minutes unremitting effort by this means, for once proved abortive. Venesection had been already employed, and the warm bath and cold applications not being convenient, we agreed to return at 1 o'clock and make another attempt at reduction. Finding it again impossible to effect our object, we decided to reanimate the system of the patient, (still a little depressed by the tobacco, although turpentine injections had been used,) and prepare for the operation.

At 3 P. M., 3d of this month, assisted by Drs. Cunningham, Newton, West, and some medical students, the usual incisions through the skin were made, the hernial sac exposed, and the internal abdominal ring divided upwards and outwards; but still the intestine, which was quite voluminous and of a dark purple colour, could not be restored. The quantity of serum and coagulable lymph which escaped during this part of the ope-

ration could not have been less than one quart, flowing out chiefly from the abdominal cavity. The incision down the scrotum was prolonged, and the intestine turned out of its sac. It proved to be the cœcum, with its vermiform process still floating in the iliac region, and which could be distinctly felt by the finger, as there were no adhesions around the neck of the hernial sac. In the repeated efforts to restore the protruded bowel, we now plainly saw that it was so far mortified, that its containing air was pressed through its coats. The internal abdominal ring was again incised and in more than one direction, yet we could not succeed in effecting the reduction of the hernia.

Believing the patient must die without being relieved, as the portion of the protruded cœcum was nearly sphacelated, and as there was certainly something peculiar about the structure, I considered myself justified in laying open the bowel. The incision made into it was about an inch, and at once allowed a free escape of its contents. The finger was now introduced into the ascending colon, and also into the ileum, through the ileo-cecal valve. The difficulty of reduction was now discovered to be a great thickening of the membranes of the upper portion of the cœcum, and which was no doubt produced by the constant pressure of the pads of trusses, which the patient had been wearing for years. I think I am in bounds when I put it down at about an inch in thickness, feeling like the fleshy part of the hand. Even with the advantage of an empty gut, and free incisions in the ring, it was with great effort returned into the abdomen. The wound was dressed with stitches and adhesive plaster. The opening in the cœcum was secured by two sutures to the skin.

At the conclusion of the operation, which was prolonged about an hour, the system of our patient was greatly prostrated, and none of us thought he could long survive. At 9 P. M., however, reaction took place, and from the following extracts of my note book, it will be seen he even had a rapid recovery.

4*th* Nov., 6 A. M.—Has had a bad night; very restless; soreness over whole abdomen; pulse 114. Took 60 drops laudanum; blister covering abdomen. During the day passed air through wound.

5*th*.—Has had a good fœcal evacuation *per anum*. Much improved; spirits good; chews his tobacco. Dressed wound; looks as well as could be expected. Has some return of hiccup. Sutures ulcerated through the skin.

6*th*.—Improving slowly. Diet still fluid.

7*th*.—Had a good evacuation per anum last night, and another one this day.

11*th*.—Steadily improving, having an evacuation about every second day, with considerable oozing through the wound. Cut off with scissors what appears to be the remains of the protruded bowel, a long irregular slough of about three inches, the sutures having all ulcerated out. It produced neither pain or hæmorrhage. The wound continues to close. On 13th, was visited by the class of the medical college.

At this date, three weeks since the operation, Jim has recovered his flesh, sits up at the fire, and has walked out of his room. The artificial anus is rapidly contracting, and his bowels continue in an excellent condition.

Augusta, *November* 24*th*, 1840.

Statistics of Medical Colleges in the United States, 1839–40.

Colleges.	Number of Students.	Authorities.
1. Bowdoin College (spring, 1840)	70	Catalogue
2. Dartmouth (autumn, 1839)	77	do.
3. Woodstock (spring, 1840)	80	do.
4. Castleton (spring, 1840)	57	do.
5. Harvard University	74	Bost. Med. & Surg. Jour. xxi, 417
6. Berkshire (autumn, 1839)	63	Catalogue
7. Yale College	45	do.
8. New York College of Physic and Surgery	102	do.
9. Fairfield College of Physic and Surgery	105	do.
10. Geneva Medical College	87	do.
11. Albany Medical College	73	do.
12. University of Pennsylvania	444	do.
13. Jefferson Medical College	145	do.
14. Pennsylvania Med. College	87	Medical Examiner, vol. iii, p. 216
15. University of Maryland	65	Amer. Med. Intel., vol. iv, p. 95
16. University of Virginia	49	do. do. vol. iv, p. 168
17. Medical College, State of South Carolina	194	Catalogue
18. Medical College of Georgia	54	Professor Eve
19. Transylvania University	257	Catalogue
20. Louisville Medical Institute	204	do.
21. Medical College of Ohio	121	Dr. Worcester
22. Willoughby Medical College	41	Catalogue
Total	2494	

I have not been able to obtain an accurate account of the number of students attending at the following institutions: Washington College, Baltimore; Columbia College, District of Columbia; Hampden Sidney College; Medical College of South Carolina; Medical College of Louisiana. Presuming the aggregate not to exceed two hundred, the whole number of medical students during the season of 1839–40 may be estimated at about twenty-seven hundred.

From this should, however, be deducted the number of physicians already graduated, who were in attendance at the different schools, and whose names are included in the respective catalogues. Thus, in the catalogue of the

University of Pennsylvania	50	are M. D.s
Jefferson	17	do.
Transylvania	22	do.
Louisville	12	do.
New York	8	do.
Berkshire	3	do.
Dartmouth	2	do.
Fairfield	2	do.
Albany	5	do.
South Carolina	4	do.
Castleton	9	do.
	134	

While in Geneva 13 were members of the senior class in the Literary College, making 130. If we deduct the above, the actual number of medical students will fall below 2600.

Number of Graduates. 1839–40.

1. University of Pennsylvania*	163	Amer. J. Med. Sci., vol. xxvi, p. 261
2. Jefferson Medical College	57	Amer. Med. Intel., vol. iii, p. 387
3. Pennsylvania Med. College	28	Medical Examiner, vol. iii, p. 454
4. Transylvania	60	Catalogue
5. Louisville	39	do.
6. Medical College, State of South Carolina	63	do.
7. Yale	15	Circular for 1840–41
8. Harvard†	22	Bost. Med. & Surg. Jour., xxxiii, 116
9. University of Maryland	14	Amer. Med. Intel., vol. iv, p. 95
10. Washington College, Baltimore	20	do. do. vol. iv, p. 96
11. Willoughby	10	Catalogue
12. New York	20	Regent's Minutes
13. Fairfield	26	do.
14. Geneva	19	Amer. J. Med. Sci., vol. xxvi, p. 264
15. Albany	17	Catalogue
16. Georgia	18	Circular, June, 1840
Total	591	

Residences of Students.—I have catalogues of *seventeen* institutions, viz: Bowdoin, Dartmouth, Woodstock, Castleton, Berkshire, Yale, New York, Fairfield, Geneva, Albany, University of Pennsylvania, Jefferson, South Carolina, Georgia, Transylvania, Louisville, and Willoughby—the students of which amount to 2098. The following are their residences:

Maine	63	Carried up	1623
New Hampshire	78	Florida	2
Vermont	112	Arkansas	1
Massachusetts	65	Kentucky	187
Connecticut	39	Tennessee	112
Rhode Island	2	Ohio	62
New York	379	Michigan	6
New Jersey	38	Indiana	29
Pennsylvania	162	Illinois	13
Delaware	9	Missouri	18
District of Columbia	4	Wisconsin	1
Maryland	22	U. S. Navy	1
Virginia	148	Texas	2
North Carolina	87	Canada	20
South Carolina	167	Nova Scotia	5
Georgia	111	New Brunswick	1
Alabama	91	West Indies	4
Mississippi	37	South America	3
Louisiana	9	Great Britain	8
	1623	Total	2098

T. R. B.

A Case of Amputation at the Shoulder Joint, with a description of a new instrument for securing deeply seated arteries. By W. E. Horner, M. D., Professor of Anatomy in the University of Pennsylvania.—The lines of incision for the removal of the upper extremity at the shoulder joint, have been so much varied by different authorities since De Dran's original operation about the year 1731, that little remains for the surgeons of this day except to select from the numerous routes which have been traced for them. We may consider the modes of

* Including four graduated in July, 1839.

† The whole number for the year ending August 26, 1840.

operating as reducible to three: first, a circular incision of the integuments, making a flap of them, and a subsequent circular incision of the muscles, the steps being very much as in common amputations. Upon this plan I saw the late Dr. Dorsey, assisted by Dr. Physick, operate in 1816 for a fungus hæmatodes of the arm. The patient being seated on a chair, the subclavian artery was compressed by myself upon the first rib with the fore finger of one hand, sustained by that of the other. The arm being excised, the axillary artery was then secured, and with but little bleeding.* The second mode consists in making a semi-elliptical flap on the anterior, and another on the posterior semi-circumference of the joint, out of integuments and muscles conjointly. Le Dran's, Sharp's, Broomfield's, and Dessault's proceedings, are represented under this. The third plan consists in making the flaps from the deltoid muscle and its integuments, this having been introduced by La Faye, and variously modified in subordinate points by different surgeons, and more especially those of the French schools.

The operation of Dr. Dorsey was performed with the dexterity which distinguished that lamented surgeon, and had a happy termination. The time consumed in it amounted to eleven minutes, including that portion devoted to securing the cut vessels. The axillary artery was evident at the first glance, as he states, and did not bleed; the arrangement for arresting its circulation having been found effectual. The reflections arising from witnessing this case, were, however, that a higher security might be given to the operation by a different position of the patient, and by a different period for securing the artery. For if, upon the moment of excising the limb, the patient from faintness had fallen from his seat, or any unsteadiness had occurred in the pressure upon the subclavian artery, the chances of a fatal, or at least a very profuse bleeding, were imminent. The conclusion to which I came, therefore, was, that the preferable process belonged to that body of surgeons who adopted the recumbent position, and who, in addition to the advantage from a provision to press the subclavian artery ou the first rib, likewise took up the axillary before the severance of the limb.

The facility with which the axillary artery can be reached by adopting a recumbent position, and laying open the front of the axilla in the earliest stages of the operation, would scarcely be anticipated by one who had not witnessed the proceeding; and it affords to this otherwise formidable act of surgery, a security from hæmorrhage certainly not to be exceeded by ordinary inter-articular amputations, where we have the resort of the tourniquet. It may possibly be a point of discussion whether the axillary artery is to be exposed by opening the axilla previously from behind, as recommended by Larry, or by opening it in front, as exhibited in the following case; the latter proceeding, however, recommends itself by the fact of greater ease to most persons of a dorsal decubitus, and by the certainty of not coming upon the axillary artery before the axilla is fully laid open; a circumstance more likely to happen from the contiguity of this vessel to the latissimus dorsi, where the exposure from behind is resorted to.

Joseph Reynolds, aged thirty-three, of good constitution, a labourer in Mr. Buck's stone-quarry, on Ridley creek, near Chester, in the act of withdrawing an instrument, called needle, from a rock, in the process of blasting, produced an explosion of the charge, amounting to about four ounces of powder. The result was an extensive lacerated wound of the left arm, beginning at the under side of it a little below the axilla, and proceeding obliquely upwards. It was probably produced by the aforesaid instrument. The *os humeri* was grazed, but not broken; the upper end of the brachial artery was torn in two, also the brachial vein; all of the adjoining nerves, as the median, ulnar, spiral, and two cutaneous, were laid bare, the coraco-brachialis and biceps flexor were cut in two, and the insertion of the pectoralis major was lacerated and exposed. A severe contusion was inflicted on the adjoining lateral part of the chest, and the face was very extensively discoloured by the grains of powder which were driven into the skin; the cornea of the right eye was perforated by some grains of the powder, the left eye was also injured. The ends of the indicator, middle,

* See Dorsey's Elements of Surgery, p. 319, vol. ii, Philadelphia, 1818.

and ring finger of the left hand were lacerated, the first down to its root; the fingers of the right hand also suffered to some degree by laceration. The quantity of blood lost on the spot was estimated at one and a half gallons. The assistance of Drs. W. Gray, Jos. Porter, and George L. Taylor, living near, was got at an early period, and the wound of the arm secured from further hæmorrhage, for the time, by a thick compress on the axillary artery, and a tight bandage.

The accident occurred at four o'clock, P. M. of Monday, May 25th: the next day, a messenger being despatched for me, I joined the consultation of the above gentlemen about three o'clock, P. M. The patient was then in an extreme state of prostration. The respiration heavy and laborious, with a weak, quick, and frequent pulse; the left arm was much tumefied, pulseless, and with a very distinct crackling of air under the skin; when the limb was stroked from below upwards, the emphysematic air could be forced out in part at the wound. The inferior orifice of the brachial vein under this pressure, discharged black fluid blood mixed with air. Sensibility to a squeeze or puncture existed on the posterior semicircumference of the arm, half way down to the elbow; lower than that, it was equivocal, and on the forearm and hand was decidedly extinguished. The indications were conclusive that the life of the limb below the wound was destroyed, except the posterior part of the arm above the elbow, and that putrefaction had began, which was further indicated by the black and mahogany colour of the integuments. Having removed the bandage and compress, the wound exhibited itself as described. I found, without difficulty, the lacerated orifice of the brachial artery, which was plugged with a firm coagulum of blood; over it I threw a ligature and then did the same for the vein, so as to prevent the recurrence of hæmorrhage, while a careful search was made into the extent and character of the injury.

A consultation with the above gentlemen was then held, whether, under the circumstances, it was proper to perform the excision of the limb at the joint, the prospect of final recovery being so gloomy, and even of the patient having strength to go through the operation. The latter was finally concluded on, the consent of the wife and friends sanctioning it, upon a candid representation of its unpromising results.

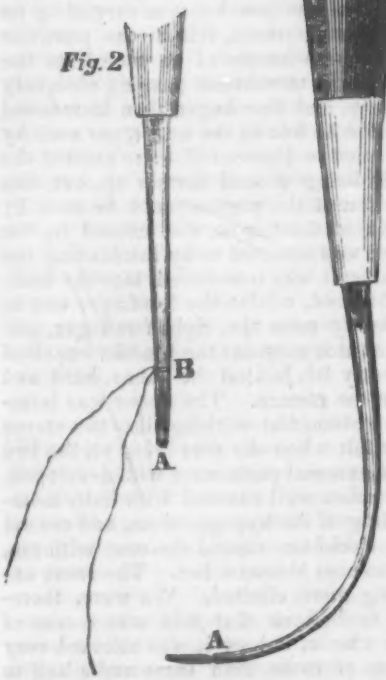
The following process was adopted to prevent further exhaustion of the patient. He was permitted to remain in bed and on his back, the shoulders being elevated, and he drawn near the left side of the bed. A semi-elliptical flap was made in front of the joint extending from the point of the acromion to the centre of the axilla, it being formed from the integuments, deltoid, and great pectoral muscle. This exposed fully the axillary nerves and blood vessels. A ligature was then passed around the axillary artery and another around the axillary vein with my hæmostatic needle, which I found on this, as on several former trying occasions, a most convenient instrument for securing large and deeply seated blood-vessels. The danger from hæmorrhage thus obviated, I proceeded to make on the posterior face of the shoulder a semi-elliptical flap, out of the posterior half of the deltoid, the latissimus dorsi, and teres major,—it extending from the point of the acromion to the centre of the axilla also. The axillary nerves and blood-vessels were cut through previous to making the posterior flap. I now proceeded to the disarticalation of the joint, which was easily accomplished. The whole of the above incisions, with the exception of the division of the posterior part of the deltoid, was executed with a scalpel; and the time consumed was inconsiderable, except that devoted to the securing of blood-vessels, large and small. Not two ounces of blood were lost from the operation, and the patient bore it well. The wound, after being exposed a short time to the air, for the purpose of affording an opportunity to any small vessels to bleed which had previously escaped detection, was then closed by the approximation of the flaps; the latter were secured by a stitch in the centre, and strips of sticking plaster, and over the latter was placed a thick compress, secured by a bandage around the thorax.

Having left the patient about sunset to return to the city, I learned through a communication from Dr. Gray, a few days afterwards, that he continued to decline in strength, and died about nine o'clock on the evening of the operation.

The needle used is represented in the following sketch:

Fig. 1.

Fig. 2



The points of principal convenience in this instrument are, 1st, the shape of the handle, Fig. 1, which is formed of ebony, with a silver ferrule, and a mark to indicate, when the needle itself is concealed, the direction of its concavity; 2d, the line of curvature of the needle, and the shape of its end, which is not pointed, but rounded and cutting, as in Fig. 2, A; and, 3d the ligature, being attached not by being passed through an eye, but by being thrown around the needle by what is called, in nautical phraseology, a clove-hitch, as in Fig. 2, B. A small notch at A, Fig. 1, is the spot to which the ligature is thus fastened.

The needle is fixed permanently in the handle, but it may be so arranged as to admit of removal; and I have, accordingly, instruments thus constructed.

It is a matter of common experience in surgery, that a needle fixed firmly in a handle has many recommendations in its application to large and deep seated arteries, from the action of the point being much more easily regulated; hence the inventions on that ground are very numerous. Where, however, this arrangement is adopted, the eye must be near the point of the needle, so as to convey the ligature under the artery; but in placing the eye there, the needle is too much weakened, unless it be made inconveniently large. It was with the view to meet this objection, that I have devised as a novelty in my own instrument,* a notch like a shoulder, which detracts but little from its strength, but which is quite sufficient to prevent the clove-hitch or the ligature from slipping backwards, while it may be very readily slipped forwards, so as to detach it at the pleasure of the surgeon. The ligature is also more readily attached by the clove-hitch than it could be passed through an eye, which is all-important in repeated and hurried applications. The flattened cutting semicircular or rounded point is also a decided advantage over the pricking point, as it turns off more readily from the cylindrical surface of the artery, and less hazard is run of puncturing the latter.

This instrument I have, by experience of its use in some urgent cases, found to be well adapted to the subclavian, external iliac, and, femoral arteries; in fact, it is so to all that are deep-seated, and within reach.—*Medical Examiner*, August 29, 1840.

* For the diversity of instruments used in taking up arteries, see Seerig Armamentarium Chirurgicum, Breslau, 1838; it being a very elaborate historical and graphic illustration of surgical instruments of all kinds and dates.

Case of Absence of the Uterus.—Dr. Isaac E. Taylor reported to the New York Medical and Surgical Society the following case: "Mrs. McM. consulted me June 14th, 1839, for a retention of her catamenia. She had been under the care of several medical gentlemen for the last three years, without any benefit. She is well formed, and her appearance healthy, though not as healthy as she was three years ago. Her age is 23, has been married four years. She has the ordinary symptoms incident to the attempt for her catamenia to commence, besides intense labour-like pains, which are so aggravated at times as almost to deprive her of her reason; these pains continuing every month for eight or nine days with partial remissions, without any secretion taking place from the vagina, or any vicarious discharge from any other organ. The periodical attacks commenced when she was 15 years of age. Concluding from her statement that some obstruction existed at the os uteri, I advised an examination, supposing that if any did exist, that the method recommended by Dr. McIntosh might be put in requisition. On examination, my finger met with an obstruction, which prevented it from passing further than the first joint of the forefinger. This induced me to ask for an inspection of the parts, which she reluctantly consented to, and I discovered that the finger could be passed to the extent of an inch—that there was a small orifice resembling the meatus urinarius, directly below it, into which a probe was inserted, and carried up no further. The finger then passed round the os externum, felt at the posterior portion of the vagina another orifice about three-fourths of an inch from the fourchette, which proved this was only a small membrane passing obliquely backwards; this was divided with a bistoury, and the finger then introduced made no further entrance, and no os uteri could be felt by the finger, nor seen by the use of the speculum. Bougies were tried to discover if there existed the least perforation that could admit of their being passed further up, but this elicited nothing more; in truth, the termination of the vagina could be seen by separating the labia, and the inch in length of the vagina was caused by the finger pushing it up. A further examination was resorted to by introducing the left forefinger into the rectum, while the catheter was introduced into the bladder, and supported by the thumb of the right hand, whilst the forefinger was in the vagina. The left forefinger could distinctly pass the right forefinger, and feel the end of the catheter in this organ. At this moment the bladder expelled its contents, and this organ could be distinctly felt behind the pubes, hard and of the size of a small egg, by the finger in the rectum. The finger was introduced also, separately into the vagina and rectum, but nothing like the uterus could be ascertained. No tumour could be felt when she was lying on the bed with the knees flexed on the abdomen. The external parts were well developed, orifice of the urethra natural, clitoris small, pubes well covered with hair, mammæ well formed and of good size; no swelling of the hypogastrium, and sexual appetite not deficient. Drs. M. Post and Peckham visited the case with me, and at my particular request, Dr. J. C. Cheesman also saw her. The same examination was also resorted to, but nothing more elicited. We were, therefore, from these examinations, constrained to believe that this was a case of congenital malformation, or absence of the uterus, unless it was situated very high up, and the vagina closed to the extent of more than three and a half to four inches. The question, from the perfect examination made, could an operation be justifiable after the manner recommended by Amussat brought to my mind the unsuccessful case of Dr. McFarlane of Glasgow, and we deemed it proper to advise that nothing should be attempted, which she was so solicitous for, solely because she was anxious to have a family, to gratify her husband. Her husband had never made any complaint of dissatisfaction, and it excited our curiosity to have an inspection of his "parts," should a suitable occasion offer. This afterwards occurred during an attack of dysentery under which he was suffering, and the penis was the size in thickness of a youth of 15 years, but the testicles were well developed."—*New York Journ. of Med. and Surg.*, October, 1840.

Adjusting Power of the Eye.—The following extract, from the published "*Proceedings of the American Philosophical Society*," presents the substance of a communication made by the editor of this Journal, to the Society at their meeting of the 18th of September last. Since that communication was made, other facts of a similar character have been observed.

"Dr. Hays made an oral communication relative to the operation recently devised for squinting, and to its effects in modifying the adjusting power of the eye for near and distant objects.

"Dr. Hays stated, that certain phenomena which he had observed in one of the cases in which he had divided the internal rectus muscle, for the cure of squinting, seemed to favour the theory of the adjustment being made by an alteration in the form of the eye, under the conjoint action of the four recti muscles; a theory rejected by the best physiologists of the day.

"The case, the details of which Dr. Hays related, was that of a gentleman thirty-six years of age, who had squinted with his left eye since the age of five years. Both the eyes were presbyopic; the left, however, was most so, and required for distinct vision a glass three Nos. higher that the other eye; the respective Nos. being 11 and 14. Vision with the left eye, even by the aid of a glass, was not perfect, words printed in long primer being scarcely legible. After the division of the internal rectus muscle, vision not only improved, but the eye became less presbyopic, and at the present time, three weeks since the operation, said Dr. Hays, the glass (No. 14) which had been before adapted to the patient's left eye, now magnifies so much that it is unpleasant to read with it; and he is able to see best with glass No 11. On careful comparison, he is unable to perceive any difference in the size of objects viewed with either eye through this glass; and an opera glass, adjusted to one eye, seems equally well adapted for the other. These facts, Dr. Hays remarked, show that a change has taken place in the left eye, and this probably consists in an elongation of its antero-posterior diameter, resulting from the operation.

"Dr. Hays also made some observations on the mode in which squinting causes an impairment of the functions of vision, and stated, that from a great number of cases which he had examined, it appeared to him to be a general rule, the greater the degree of strabismus, the more imperfect is the sight of the affected eye. In all the cases in which he had operated, the sight had been improved.

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Removal of a Portion of the Integuments of the Scrotum for the Cure of Varicocele. This operation lately devised by Sir Astley Cooper, (see this Journal for August, 1838, p. 492,) has been performed for the first time in this country, we believe, by Dr. John Watson of New York. The relief afforded, Dr. Watson states, was not quite so great as in the cases published in Great Britain, yet sufficiently so to recommend a repetition of the operation, in preference to any other hitherto proposed, in severe cases of this disease.

The subject of the case was a seaman aged 21. The operation was performed on the 24th of June, in the New York hospital, and the patient was discharged on the 4th of August. At this latter date, "the cicatrix produced by the healing of the wound was sufficient to support the distended veins, and prevent them from protruding much below the external abdominal ring, but they had not become permanently contracted or consolidated. After the patient had been for some time in bed, the swelling would appear to be effaced; but after he had been walking about the house all day, the enlargement of the veins was still apparent. He was, however, permanently relieved of the dragging sensation and pains of which he complained before the operation.—*N. York Journ. Med. and Surg.*, October, 1840.

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Remarks on Statistical Medicine, contrasting the result of the Empirical with the Regular Practice of Physic. By Samuel Cartwright, M. D., of Natchez.—This is a very curious and interesting paper, and is one of the most judicious and efficient attempts to demonstrate the evils of quackery that we have met with.

We have long despaired of any means being devised for opening the eyes of the public to the pestilence in question, but if any one can effect that object, certainly it is that which Dr. C. has adopted. His investigations have every mark of having been made with care and conscientiously, and his results appear irrefutable.

It appears from Dr. Cartwright's researches, that during the ten years from the 31st December, 1823, to the 1st January, 1834, the whole number of deaths was 978, the population being at an average of 3,000; being an annual mortality of 1 in 30.6 per cent. "Natchez, during these ten years mentioned, *protected and encouraged science, and science protected and guarded her citizens.* The citizens of Natchez, during these ten years, were protected by strict laws against murderous quacks and empiricism of all kinds." * * *

"Before the termination of 1833, the laws of Mississippi, which protected the science of Medicine and guarded the people against ignorant presumers and pretended reformers, were virtually annulled. By the first of January, 1834, a host of empirics had made their way into our city, and commenced in good earnest, what they called a reformation in medicine. They first began their operations by using every artifice to destroy the confidence of the public, in the virtue of those remedies and means which the accumulated experience of ages has found to be the most effectual in the treatment of a large class of diseases, particularly such as occur in warm climates. They used great and unwearied exertions, not only to prejudice the public against most of the medicines which physicians employed, calling them poisons, but they endeavoured to destroy public confidence in the physicians themselves, and to bring contempt and disrepute upon the regular exercise of the medial art. So great was their zeal, they succeeded in weakening public confidence in the medical profession in a greater degree than could have been expected in so intelligent a community. Some good citizens of Natchez and its vicinity they entirely alienated from it. In some instances they even succeeded in turning those who owed their lives to the scientific practice of medicine, altogether against it. The natural effect of debility and old age were artfully attributed to the influence of calomel and the lancet. Deaths, which no human means could avert, and which must occur while man is mortal, were said to have been occasioned by poisonous drugs. The more numerous cases, which *got sound and well* under the use of the *very same* drugs, were overlooked. Nothing was likewise said of the many remediable cases which proved fatal under the empirical practice—but the welkin was made to ring with every case which got well under it, or which recovered in spite of it."

Dr. C. next applies statistical medicine to that portion of time which has elapsed since the introduction of the pretended reformed medicine into Natchez.

"The total number of deaths," he observes, "which occurred in ten years, from 1823 to 1834, is 978. If, therefore, a population of 3000, in ten years, lose 978, how many deaths would occur in a population of 6000 in four years and nine months? The total number should be 929. But the actual number of deaths recorded in the sexton's books, the last four years and nine months, since the pretended reformation in medicine commenced, is 1315. The reformation, therefore, has reformed, in four years and nine months, no less than 386 individuals out of existence. But to put the matter in a plainer light—the average annual mortality of Natchez, since empirics have divided the practice with the regular physicians, is no less than one death per annum in every 21.7 of the inhabitants; but to estimate the mortality on the actual population of 1837, when Natchez contained its highest population, 6000, it would be 1 in 22.2; but in the ten years preceding this mixture of empiricism with the regular practice, only one in every 30.6 died per annum. During these ten years, the number who died under the care of physicians was about 1 in 47 per annum, and the number of unreported deaths during the same period was 1 in 89 per annum. But during the last four years and nine months. including the late epidemic, and including all the cases from the Natchez hospital, the physicians lost 1 in 41 per annum, whereas the unreported deaths of the same period were 1 in 45.7 per annum; nearly double the unreported cases of the former period, and exceeding the whole

mortality occurring in the practice of the physicians during ten years. But it may be supposed, that the increased mortality of the last four years and nine months, may be owing in part to the greater number of persons who have settled in Natchez, and who have had to undergo that peculiar change called acclimation. It may also be supposed, that the comparatively small mortality of the ten preceding years might be owing to a greater proportional number of citizens leaving town during the sickly months in the first period of ten years, than in the second period of four years and nine months. Plausible as these suppositions may be to account for the great difference of mortality during the two periods, a voice from the cemetery proclaims that such is not the true reason. It is well known that the fever of acclimation, or the stranger's fever, as it is sometimes called, never occurs in the winter or spring. It is likewise known, that no persons fly from town in order to avoid sickness in January, February and March. But what does the voice from the burial ground say? It says, that the total number of dead bodies conveyed there, during a period of ten years, from 1823 to 1834, in the months of January, February and March, was only 159; and that the number carried thither, the last five years in the same months, January, February and March, is no less than 239. Half the time and twice the population ought to give the same results, as twice the time and half the population. If, therefore, the introduction of empiricism, and patent medicines into Natchez had added nothing to the mortality of the place, the aggregate number of deaths which occurred during the first quarter of each of the last six years, should not have exceeded the aggregate number of deaths which occurred during the first quarter of each of the ten preceding years. But they do exceed them, as far as 239 exceed 159. The difference between these two numbers gives the precise increase of mortality, during the months of January, February and March, since half a dozen or more deluded empirics made this city their place of residence and commenced, what they called, a reformation in medicine. The average annual mortality, taking these months as the standard, during ten years, was only 1 in 47. But no sooner did illiterate mountebanks make a lodgement in Natchez, than the mortality of January, February and March, increased to 1 in 31.4 per annum. In the month of April, during the ten years between 1833 and 1834, the physicians lost 39 patients, and during the same time 11 deaths were unreported. The whole mortality for ten Aprils in succession was only 50. But since quackery has been let loose upon the people of Natchez, 85 persons have died during the last five Aprils—being 35 more than the proportional number of deaths that occurred before the empirics proffered their services to the good people of this city.

"In other words, making April the standard, the average mortality would be only 1 in 50 per annum of the total population, including strangers, during a period of ten years. But since Natchez has been overrun by empirics, the mortality of the last five Aprils has increased to 1 in 29.4 per annum. The mortality which occurred in the practice of the physicians in each month of April for ten years, between 1823 and 1834, has been at the rate of 1 in 64.2. The mortality which has occurred in the practice of the physicians of the last five Aprils has been at the rate of 1 in 65.7—nearly equal as far as the physcyians are concerned in both periods. Yet in the first period of ten years only 1 in 50 died, but as soon as quackery was introduced, 1 in 29.4 died. It is worthy of particular remark, that the number of deaths reported by the physicians in both periods, not only in the month of April, but every other month of the year, is relatively very nearly the same. Thus, 39 deaths were reported by physicians in the ten Aprils of the first period, and 38 in the five Aprils of the second period. But while the unreported deaths of the first period were only 11, the unreported deaths of the second period amount to 47. Again, during the first ten of the last fifteen Mays, Natchez lost in all 73 individuals; 40 reported by physicians and 33 unreported cases. But during the last five Mays, she has lost 99 individuals, 33 reported by physicians and 66 unreported cases, or cases reported by persons who are not regular physicians. During the last period the unreported deaths, or those which have been reported by persons not

belonging to the medical profession, double the number of deaths reported by physicians; whereas before the introduction of quackery, a large majority of all the deaths were reported by the physicians. To sum up the matter, therefore, in January, February, March, April and May, of the ten years preceding 1834, 293 persons died in Natchez; while in the same months for the last five years, 421 have died. In half the time and twice the population, the number should have been the same. No less, therefore, than 128 individuals have unnecessarily perished, or have been wantonly sacrificed, since the first of January, 1834, during the five most healthy months in the year. Taking these five healthy months, as being the months best calculated to test the success of the empirical practice, as the months when empiricism is most popular, (diseases being the mildest, and the principle of life the strongest,) 128 individuals have died, over and above the number which did die in twice the time and half the population, before the empirical practice was introduced, and before public confidence was shaken in the medical profession. If these healthy months were made the standard of comparison, Natchez would lose 331 individuals in five years over and above the number she lost in ten years and half the population, under the regular exercise of the medical profession, unmixed with quackery. The empirics will no doubt try to evade the issue by disowning the unreported cases, or may even lay them to the charge of the physicians. But the main and essential fact, *that the mortality of Natchez has greatly increased since they came to town and commenced a pretended reformation in medicine, will still stand in bold relief against them.* If they could prove that the physicians neglected to report all the deaths which occurred in their practice, the physicians, on their part, could prove that many of the cases they did report, had previously been subjected to steam, or that the sick had eked out the first period of their disease in the use of nostrums and quack medicines. The remedial statistics of Natchez prove in the clearest and most undeniable manner, that, previous to the introduction of quackery, the annual average mortality for ten years in succession, embracing a very sickly period, rife with epidemic diseases, was much less, or at least very little, if any greater, than the average mortality of most other towns and cities in the world which are reputed healthy. But since the introduction of quackery, the annual average mortality has greatly increased. To charge the increased mortality to the present regular physicians would avail empiricism nothing, unless it could blot out from the records of the city the diminished mortality under the regular physicians, before it was permitted to obtrude itself among them. The present physicians, and those of a former day drank at the same well of science. When the empirics came to Natchez the annual average mortality, including strangers, still-born children, and the deaths occurring among the negroes brought here for sale, was only 1 in 30.6—and had been at this rate for the ten preceding years, while the mortality among the citizens proper did not exceed 1 in 61; but the very month in which the empirics commenced, in good earnest, to reform a science they had never studied, the mortality suddenly increased to one death in every 21 inhabitants per annum, notwithstanding that Natchez had, in the mean time, ceased to be a market for the sale of negroes, which formerly added very considerably to the bills of mortality, not only from the deaths which occurred among them, but likewise from the contagious diseases, as measles and whooping cough, which they almost annually introduced into the city.

"The important fact, that the mortality of Natchez has greatly increased since the introduction of quackery, cannot be evaded by saying, that I have rated the population too high at one period and too low at another. The population in 1830 was known to be 2789. The number of deaths which occurred in that year is likewise known to be 80—which would make the average for that year only 1 in 34.8. The population in 1837 amounted to 6160. The number of deaths which occurred in nine months of that year, omitting entirely the deaths which occurred during the period of the epidemic in August, September, and October, amounts to 186—this would give an average mortality of 1 in 24.4 per annum. But if the population since the empirics have been permitted to practise medicine in Natchez, be put at the highest enumeration, and

at the lowest enumeration previously to their introduction, still would it be that the mortality of the city, since the introduction of quackery, has increased in a manner sufficient to demonstrate that the city has gained nothing by the pretended reformation in medicine, but has lost much. I do not say, nor do I believe, that the empirics have actually carried a sufficient number of patients through a full course of steam and No. 6, to account for the great increase of mortality; but I do say, and believe, that the war they have waged against the known and well-tried remedies of the Materia Medica, and the measures they have taken to destroy public confidence in the medical profession, are nearly sufficient of themselves to account for the increased mortality, without taking into the estimate those who died under their scalding treatment."

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Medicinal Properties of the Cotton Plant.—Dr. E. F. Bouchelle of Columbus, Miss., states in a letter to Prof. Short of Louisville, that the cotton plant displays a particular affinity for the female sexual organs, and is capable of modifying their functions in a remarkable manner. He has exhibited it as a remedy in amenorrhea with decided benefit, five cases of which are mentioned by him, but in terms too general to be satisfactory. He seems to regard it as a specific for this form of catamenial derangement, since he expressly states that it is applicable to every case without regard to the state of the system.

But it is as an oxytocic that the article is most celebrated by Dr. Bouchelle, since in his hands it has proved itself to be nowise inferior to the secale cornutum. He has administered it in several cases of labour, when his hopes of a favourable issue were gloomy indeed, and in every instance he was forcibly impressed with its benignantly specific influence upon the parturient action of the uterus. He has given it *experimentally*, also, in cases of natural labour, and with equally satisfactory results. In such cases, he will allow us to suggest, the remedy maintained a strict neutrality, else it could scarcely have failed to do mischief. In natural labour, the expulsive contractions are justly proportioned, both as to intensity and frequency of recurreuce, to the obstacle to be overcome, and they cannot be accelerated or strengthened without risk of injury to both mother and child. Dr. Bouchelle assures us that the cotton plant not only possesses the property of invigorating feeble contractions of the uterine fibres, but that it *originates* expulsive contraction at any period of gestation, and will induce *immediate* abortion when taken in the proper quantity.

Dr. Bouchelle avers, that the cotton plant is habitually resorted to by slaves in the South for the criminal purpose of inducing abortion, and that it is a fact long and well known in that region that two-thirds, at least, of the likeliest and youngest female slaves are either sterile or invariably miscarry when they do become pregnant, from which he infers, furthermore, that the use of the article destroys the generative capacity. He mentions as a remarkable fact, that those who resort to it either with the view of inducing abortion or of destroying the generative capacity, experience no detriment to their health therefrom.

The preparation used by Dr. Bouchelle is a decoction made by boiling four ounces of the inner bark of the root in a quart of water until it is reduced to a pint. Dose, a wine-glassful every twenty or thirty minutes as an oxytocic; he does not specify the dose, &c., in amenorrhœa.—*Western Journ. Med. and Surg.*, August, 1840.

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Congenital Fungus Hæmatodes.—Prof. Drake has recently been shown by Drs. Carpentier and Blackstone, a case of this in a female child, two days old. The disease occupies the whole of the left nates, which is swelled out into a great, shining, globoid tumour; rendered irregular by tuberous elevations. It extends from the perineum, anus and vulva to the sacrum and the spine of the ilium, so as to involve the acetabulum. Its colour is deep red. Many of the cutaneous veins are much enlarged. A portion of the skin had suffered abrasion and considerable hæmorrhage had already occurred. Some parts of the tumour are hard, others soft—the general mass felt hard. It was tender under the hand. In short it had all the diagnostic marks of encephaloid, before fungous growths

appear. The child was rather lean but seemed to be in health; and was free from tumours or malformations in any other part.—*Western Journ. Med. and Surg.*, July, 1840.

Stramonium in Dysmenorrhœa.—Dr. T. Cogley, of Mount Vernon, Ohio, states, in a communication in the *Western Journal Med. and Surg.*, for November, 1840, that he has used the stramonium with more or less success, in at least six cases of amenorrhœa, and is therefore induced to regard it, as one of our most efficient remedies in that disease. The remedy is contra-indicated where there is a plethoric state of the system, and this condition must be removed by venesection and catharsis, before the stramonium is administered. Dr. C. gives the pulverised seed in such doses, as considerably to dilate the pupils. The extract would doubtless be a neater mode of administering the remedy, and if we might judge from the effects of a kindred article, the extract of belladonna, we should anticipate benefit from its use.

Nasal Polypus.—Dr. Brice, of Newark, Ohio, is said to have permanently cured three cases of nasal polypus, by the application of the sanguinaria *canadensis*. He employed both the powder and the decoction of the root.—*Western Journ. Med. and Surg.*, September, 1840.

Library of Practical Medicine.—The American edition of the third volume of this valuable work is completed. This volume comprises the diseases of the Organs of Respiration, by Dr. Williams; Influenza, by Dr. T. Thompson; Asphyxia, by Dr. Carpentier; Diseases of the Organs of Circulation, and Malformations of the Heart, by Dr. Joy. It is in all respects, at least equal to its predecessors.

Proceedings of the Connecticut Medical Society.—This Society held its annual convention at New Haven, on the 13th of May, 1840. A dissertation "on the advantages of prompt and efficient practice in acute diseases," was read by Dr. Richard Warren. The Society numbers 376 members.

College of Physicians and Surgeons at Fairfield, New York.—We understand that this institution has been closed.

Albany Medical College.—Several changes have been made in this institution during the past year. The faculty at present are as follows: Alden March, M. D., President and Professor of Surgery; James McNaughton, M. D., Prof. of the Theory and Practice of Medicine; Ebenezer Emmons, M. D., Prof. of Materia Medica and Natural History; Lewis C. Beck, M. D., Prof. of Chemistry and Therapeutics; James H. Armsby, M. D., Registrar and Prof. of Anatomy; David M. McLachlan, M. D., Prof. of Obstetrics and Diseases of Women and Children; Thomas Hun, M. D., Prof. of Institutes of Medicine; Amos Dean, Esq., Prof. of Med. Jurisprudence.

A Second Appeal to the People of Pennsylvania on the subject of an Asylum for the Insane Poor.—The necessity for an institution for the Insane Poor of this state is ably and forcibly shown in this pamphlet. As a citizen of the commonwealth, we feel mortified that a second appeal in favour of a project of such manifest and pressing importance should have been required, and trust that no real or fancied considerations of *convenience* shall be allowed longer to postpone the just claims of those who are in poverty and deprived of their reason, to such alleviation as their afflictions will admit of.

TO READERS AND CORRESPONDENTS.

The Review signed "An Old Army Surgeon," even were it not objectionable from its tone, would be entirely inadmissible in this Journal, as it is our invariable rule never to give insertion to any article which is not accompanied by the real signature of the writer.

Some of our friends have inquired why no notice was taken in our last Number of the very interesting experiments of Joerg on the Action of Medicines, an account of which, copied from the *London Medical Gazette*, has recently appeared in some of our cotemporaries. In reply we will state that these experiments are no longer novelties. They were performed nearly twenty years ago, and a report of them was published in 1825, in a volume entitled "*Materialien zu einer kunftigen Heilmittellehre durch Versuche der Arzneyen an gesunden Menschen*," &c., an elaborate review of which will be found in the Number of this Journal for May, 1832.

The following works have been received:—

First Lines of Physiology; designed for the use of Students of Medicine. By Daniel Oliver, M. D., LL. D., A. A. S., Prof. Mat. Med. in the Medical College of Ohio. Philadelphia, 1840. Herman Hooker. (From the publisher.)

Library of Practical Medicine. Diseases of the Organs of Respiration. Philadelphia, 1841. Lea & Blanchard. (From the publishers.)

Lectures on the Theory and Practice of Physic, delivered in the College of Physicians and Surgeons of the University of the State of New York. By the late David Hosack, M. D., LL. D., F. R. S., Prof. of the Theory and Practice, &c., and of Clinical Medicine in that Institution. With an Introductory Letter, by N. Chapman, M. D., Prof. of the Theory and Practice of Medicine in the University of Pennsylvania, &c. Edited by his friend and former pupil Henry W. Ducachet, D. D., Rector of St. Stephen's Church, Philadelphia. Philadelphia, 1838. Herman Hooker. (From the publisher.)

Outlines of Anatomy and Physiology; translated from the French of H. Milne Edwards, M. D., Prof. of Natural History at the Royal College of Henry IV, &c., &c., &c. By I. F. W. Lane, M. D. Boston, 1841. Little & Brown. (From the publishers.)

Die Lehre von der Zurechnungsfähigkeit bei zweifelhaften Gemüthszuständen. Fur Aerzte und Juristen praktisch dargestellt, von Dr. Adolph Schnitzer, praktischen Arzte, Operateur und Geburtshelfer zu Berlin, &c., &c. Berlin, 1840. (From Dr. Oppenheim.)

Beitrag zur Geschichte der Manie ohne Delirium. Von Dr. Johann Wilhelm Heinrich Conradi. Gottingen, 1835. (From Dr. Oppenheim.)

Ausführliche Encyklopädie der gesammten Staatsarzneikunde, bearbeitet und herausgegeben, von Geo. F. Most, Doctor der Philosophie, Medicin, Chirurgie und Geburtsnülfe, &c., &c. Leipzig, 1839-40. No. 7 to 14 inclusive. (From Dr. Oppenheim.)

Lettre a l'Académie de Médecine. Examen du Rapport sur la question de la dissolution des Calculs urinaires. Par Leroy D'Etioles, M. D. Paris, 1839. (From Dr. Oppenheim.)

A Visit to thirteen Asylums for the Insane in Europe; to which are added a brief notice of similar institutions in Transatlantic countries, and in the United

States, and an Essay on the Causes, Duration, Termination and Moral Treatment of Insanity; with copious Statistics. By PLINY EARLE, M. D., Resident Physician of Friends Asylum for the Insane at Frankford, &c., &c., &c. Philadelphia, 1841. J. Dobson. (From the author.)

Medical Etiquette; or an Essay upon the Laws and Regulations which ought to govern the Conduct of Members of the Medical Profession, in their relation to each other. Compiled exclusively for the profession. By ABRAHAM BANKS, Esq., M. R. C. S., &c., &c., &c. London, 1837. (From the author.)

Report of THOMAS LAWSON, M. D., Surgeon-General U. S. Army. Communicated by the President to the two Houses of Congress at the commencement of the second session, twenty-sixth Congress. Washington, 1840. (From the Surgeon-General.)

Annual Report of the Board of Trustees of the Massachusetts General Hospital for the year 1840. Boston, 1841. (From Dr. L. V. BELL.)

Second Annual Report of the Directors and Superintendant of the Ohio Lunatic Asylum, to the thirty-ninth General Assembly. Presented 20th December 1840. Columbus, 1840. (From Dr. AWL.)

Journal of the Proceedings of a Convention of the Physicians of Kentucky, held in Frankford on the 11th January 1841. Frankford, 1841.

Memorandum of a late Visit to some of the Principal Hospitals, Prisons, &c., in France, Scotland and England. Embraced in a letter to the Acting Committee of the Philadelphia Society for Alleviating the Miseries of Public Prisons. Philadelphia, 1840.

An Appeal to the Citizens of Buffalo, and of the county of Erie, in behalf of new and more efficient means of Medical relief for the Sick Poor. By AUSTIN FLINT, M. D. Buffalo, 1841. (From the author.)

Rambles in Europe in 1839; with Sketches of prominent Surgeons, Physicians, Medical Schools, Hospitals, Literary Personages, Scenery, &c. By WILLIAM GIBSON, M. D., Prof. of Surgery in the University of Pennsylvania, Senior Surgeon to the Philadelphia Hospital, &c., &c. Philadelphia, 1841. Lea & Blanchard. (From the author.)

A Reply to an Attack by HENRY J. BOWDITCH, M. D., upon the essay on the Principal Writings of P. Ch. A. LOUIS, M. D., as contained in the Medical and Physiological Commentaries. By the Author. Boston, 1840. (From the author, M. PAINE, M. D.)

Introductory Lecture before the Surgical Class of Geneva Medical College. Delivered December 1, 1840. By FRANK HAMILTON, M. D., Prof. of Surgery. Published by request of the Class. Geneva, 1840. (From the author.)

Introductory Lecture to the course of Obstetrics and Diseases of Women and Children in Jefferson Medical College of Philadelphia, for the session 1840–41. By R. M. HUSTON, M. D., Prof. of Obstetrics and the Diseases of Women and Children, &c., &c. Published by the Members of the Class. Philadelphia, 1840. (From the author.)

Catalogue of the Officers of Geneva College; and of the Faculty and Students of the Medical Department for 1840–41. Geneva, 1841. (From the Medical Faculty.)

Harvard University. Catalogue of Students attending Medical Lectures in Boston, 1840–41, with a circular of the Faculty. Boston, 1841. (From the Medical Faculty.)

Annual Catalogue of the Officers and Students of the Medical Institute of Louisville for 1840–41. Louisville, Ky., 1841. (From Prof. SHORT.)

Catalogue and Circular of the Albany Medical College. Albany, 1841.

Catalogue of the Trustees, Officers, and Students of the University of Pennsylvania. Philadelphia, 1841.

Dissertations on Diseases of the Digestive, Urinary, and Uterine Organs. By Drs. Joy, Symonds, Budd, Thomson, Christison, Ferguson, and Simpson. Edited by Alex. Tweedie, M. D., F. R. S., &c., with notes by W. W. Gerhard, M. D. Philadelphia, Lea & Blanchard, 1841. (From the Publishers.)

Annual Announcement of the Medical Department of the Transylvania Uni-

versity, containing the circular for the ensuing session; and the Catalogue of Pupils, and of the Graduating Class, for 1840-41. (From Prof. Mitchell, Dean of the Faculty.)

The Edinburgh Medical and Surgical Journal, January, 1841. (In exchange.)

The British and Foreign Medical Review, or Quarterly Journal of Practical Medicine and Surgery. Edited by JOHN FORBES, M. D., F. R. S., &c., &c., January 1841. (In exchange.)

The Medico-Chirurgical Review and Journal of Practical Medicine. Edited by JAMES JOHNSON, M. D., and HENRY JAMES JOHNSON, Esq., January 1841. (In exchange.)

The London Medical Gazette, October, November and December, 1840. (In exchange.)

Revue Médicale, July, August and September, 1840. (In exchange.)

Gazette Médicale de Paris, August, September and October, 1840. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, August, September and October, 1840. (In exchange.)

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La Lancette Française, Gazette des Hôpitaux civils et militaires, August, September and October, 1840. (In exchange.)

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The American Medical Library and Intelligencer, November and December, 1840, and January, 1841. (In exchange.)

Boston Medical and Surgical Journal, January, February and March, 1841. (In exchange.)

The Medical Examiner, December, 1840, and January and February, 1841. (In exchange.)

The Western Journal of Medicine and Surgery, January and March,* 1841. (In exchange.)

The American Journal of Pharmacy, January, 1841. (In exchange.)

The American Journal of Dental Science, January and February, 1841. (In exchange.)

* The February Number, 1841, of this Journal has not reached us.

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XI. The Library of Practical Medicine—A System of Practical Medicine, comprised in a series of Original Dissertations. Arranged and edited by Alexander Tweedie, M. D., F. R. S., &c. &c. Diseases of the Organs of Respiration. 8vo. pp. 575. Philadelphia: Lea & Blanchard. - 474
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XIX. A Memoir of the Life and Character of the late Joseph Parrish, M. D. Read before the Medical Society of Philadelphia, October 23, 1840. By George B. Wood, M. D. Philadelphia: 1840; pp. 72, 8vo. - - 490
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